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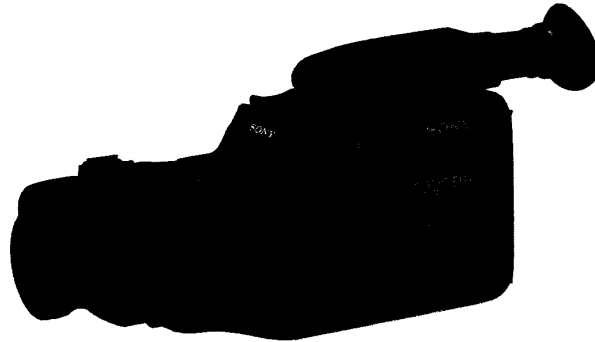
VS-8150

MODEL

SERVICE MANUAL

CCD-AU230/F350E/F350EPAK

SERVICE MANUAL



CCD - F350E

AEP Model
UK Model

CCD - F350E

E Model

CCD - F350E/F350EPAK

Australian Model

CCD - AU230

Handycam

Video 8

U MECHANISM

SPECIFICATIONS

For MECHANISM ADJUSTMENTS, refer to the
"8 mm Video MECHANISM ADJUSTMENT
MANUAL III (U MECHANISM)" (9-972-732-11).

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassette
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording	SP mode: 1 hour 30 min. (P5-90) LP mode: 3 hours (P5-90)
Playback time	SP mode: 1 hour 30 min. (P5-90) LP mode: 3 hours (P5-90)
Fast forward/rewind time	Approx. 6 min. 30 sec. (P5-90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (black and white)
Lens	Combined 6 × power zoom lens f=7-42 mm. F 1.4 with macro Filter diameter: 46 mm
Auto focus system	TTL
Colour temperature	AUTO, HOLD • (indoor) 3,200 K • (outdoor) 5,800 K
Minimum illumination	5 lux
Illumination range	5 lux-100,000 lux (0.5-9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic Back light adjustment

Input and output connector

Video output*	Phono jack, 1 Vp-p, 75 ohms unbalanced sync negative
Audio output*	Phono jack, -7.5 dBs, (at output impedance less than 2.2 kilohms)
RFU DC OUT	Special minijack, DC 5 V
Video input	Phono jack, 1 Vp-p, 75 ohms unbalanced, sync negative
Audio input	Phono jack, -7.5 dBs, input impedance more than 47 kilohms
Earphone jack	Minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack
MIC jack	Minijack, -66 dBs, low impedance with 2.5 - 3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5V DC

* CCD-AU230/F350E (E model) only have output connector.

- Continued on next page -



8 VIDEO CAMERA RECORDER
SONY®

General

Power requirements

On battery mounting surface
6.0 V (battery pack)
7.5 V (AC power adaptor)
9.0 V (alkaline batteries)

Power consumption

6.9 W (camera recording)
including the viewfinder

Installation

Vertically, horizontally

Operating temperature

0°C to 40°C

Storage temperature

-20°C to +60°C

Dimensions

Approx. 122 × 153 × 317 mm
(w/h/d)

Weight

including lens hood
Approx. 1.2 kg
excluding the battery and cassette

Microphone

Electret condenser microphone,
omni-directional monaural type

Design and specifications are subject to change
without notice.

Supplied accessories

- Battery pack
NP-55 (1) (AU230/F350E (E model))
NP-66 (1) (F350E (AEP, UK model))
- AC Power adaptor AC-V35 (1)
- RFU adaptor
RFU-90AS (1) (AU230)
RFU-90E (1) (F350E (AEP, model))
RFU-89EA (1) (F350E (UK, E model))
With the RFU-89EA, an aerial selector and
a screwdriver are supplied.
- Lithium battery CR2025 (1)
- Lens cap (1)*
- Shoulder strap (1)

Note :

CCD-F350EPAK is model that carrying case is added in CCD
-F350E.

Only accessories and packing materials (See page 193) are
different from those in CCD-F350E.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red as shown below. This enables to find the location on the board easily when servicing.

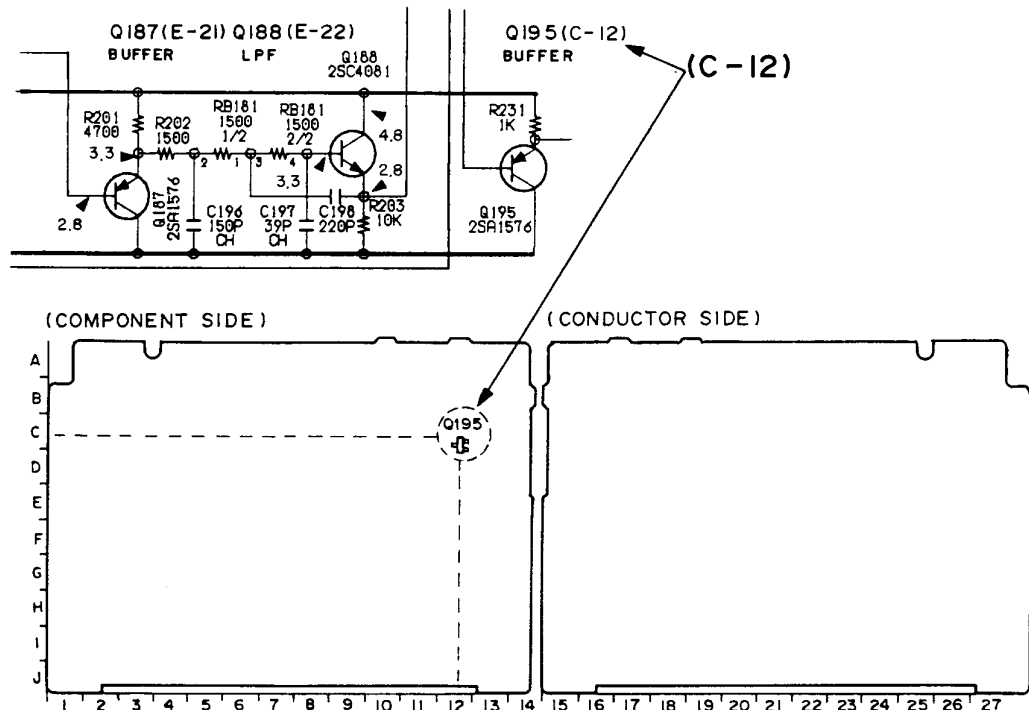


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8. MECHANISM BLOCK ADJUSTMENTS

Refer to the separate "8 mm Video Mechanical Adjustment Manual III U Mechanism" for adjustment and checking of the mechanism block and for replacement of mechanical parts.

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9. VIDEO BLOCK ADJUSTMENTS

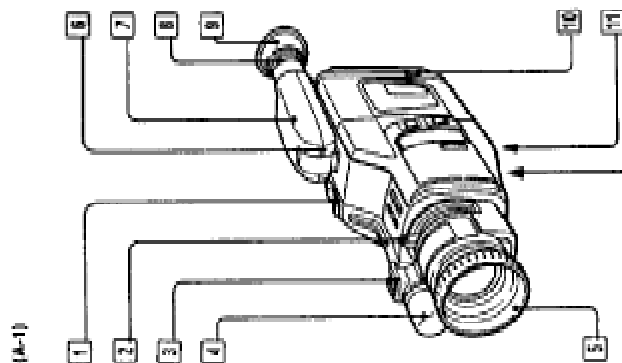
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SECTION 1 GENERAL

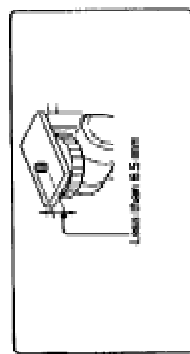
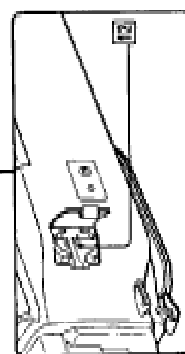
Identifying the Parts

For details on the use of each control, refer to the pages indicated in the circle.



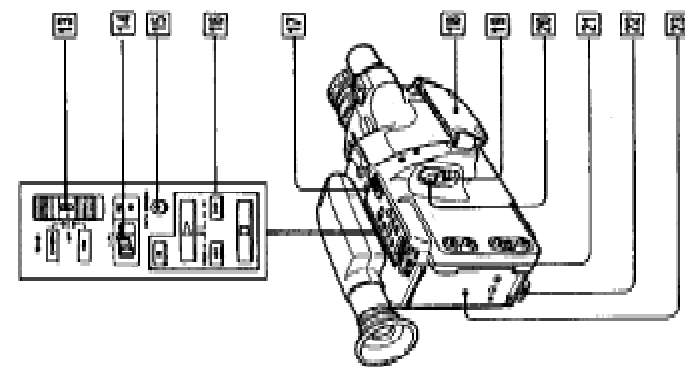
(A-1)

- 1 Power zoom button
- 2 Zoom lever and Macro button
- 3 Accessory shoe
Attach an external microphone, video light, etc.
- 4 Built-in microphone (internal)
- 5 Lens hood
Also functions as focus ring.
- 6 Camera recording battery lamp
Lights during camera recording. It blinks when the battery is exhausted.
- 7 Viewfinder
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution, indications and function mode are displayed on the viewfinder screen.
- 8 Viewfinder lens adjustment ring
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.
- 9 Eyecup
- 10 BATT (battery eject) knob
- 11 Tripod receptacle (bottom)
- 12 Lithium battery compartment



Note when attaching a tripod not manufactured by Sony.
When attaching a tripod not manufactured by Sony, the length of the camera mounting screw must be less than 6.5 mm.
Otherwise the screw may damage the inner parts of the camera.

(A-2)



(A-2)

- 13 POWER switch
CAMERA: For camera recording
VTR: For playing back or editing tapes
OFF: Power off
- 14 REC (recording) switch
Slide in the direction of the arrow.
- 15 DATA SCREEN button
Press to display the indication on the viewfinder screen on the TV.
- 16 Tape transport buttons
▷ (playback)
◀▶ (FF: fast forward)
◀◀ (REW: rewind)
□ (stop)
|| (pause)
- 17 REC MODE (recording mode) EDIT switch
Switch it depending on the operating mode.

Mode	Recording	Playback	Editing
Setting	REC MODE L.P. L.P.	EDIT EDIT	EDIT EDIT
Function	Recording mode switch	EDIT switch	EDIT switch

- 18 Grip belt
- 19 START/STOP button
Press a start and stop camera recording.
- 20 STANDBY switch
Slide up to STANDBY to set the unit to recording pause mode.
- 21 EJECT (cassette eject) button
- 22 Hook for shoulder strap
Attach a shoulder strap.
- 23 Battery mounting surface

This section is extracted from
CCD-F350E (E Model) / AJ230
instruction manual

Identifying the Parts

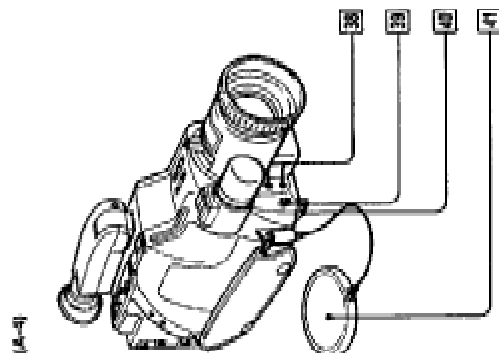
Identifying the Parts

- (A-3)
- 24 ZERO MEM (zero memory) button
Used to memorize the counter zero point.
- 25 COUNTER RESET button
Press to reset the counter to zero.
- 26 EDIT/SEARCH (and recording review) button
- 27 AUTO LOCK cover
Keep this cover closed when adjusting the focus, white balance, or shutter speed automatically. To adjust them manually, slide open this cover so that the buttons inside can be seen.
- 28 SHUTTER SPEED button
Used to select the shutter speed.
- 29 FOCUS button
Used for manual focusing.
- 30 WHITE BAL (balanced) button
Used for manual white balance adjustment.
- 31 BACK LIGHT button
- 32 DATE (+) and TIME (NEXT) buttons
Press to display or turn off the date or time.
- 33 VIDEO/AUDIO IN (input) jacks (phone jacks)
- 34 VIDEO/AUDIO OUT (output) jacks (phone jacks)
- 35 RFU DC OUT (RFU adapter DC output) jack (special mini-jack)
Supplies power to the RFU adapter.
- 36 (earphone) jacks (mini-jack)
- 37 REMOTE (L) connector (stereo mini-remote jack)
Carries an optional GP-80 wired Remote Commander or RM-80 wired Remote Commander.
Do not connect other equipment.

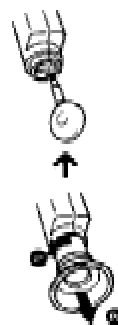
About 42
42 means the LANC connector.
43 stands for Local Application Control Bus System.
The 43 connector is used for controlling the tape recorder, video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

Identifying the Parts

- (A-4)
- 38 MIC jack and DC OUT (microphone power output) jack
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.
- 39 REC START/STOP button for low position
- 40 Hook for shoulder strap
Attach a shoulder strap.
- 41 Lens cap
Squeeze both sides of the lens cap to remove it.



- (A-5)
- To remove dust from inside the viewfinder. Detach the eyepiece as illustrated and clean the surface of the screen with a blower.



Preparing your camcorder Connecting the Power Sources

First, Choose the Power Source.

Place	Power source	Accessory to be used
Outdoors	Battery pack	Battery packs BP-55, BP-66H, BP-77H or BP-77
	Alkaline batteries	Battery case BPC-77 or BPP-55
Indoors	House current	AC power adapter AC-105, AC-103 or AC-105
In the car	12V or 24V car battery	DC pack DCP-55, or AC power adapter AC-103 and car battery cord DCC-104E

Note on power sources
Disconnecting the power source or removing the battery pack during recording or playback may damage the recorded tape. In the case supply the power again immediately.

Using the Battery Pack

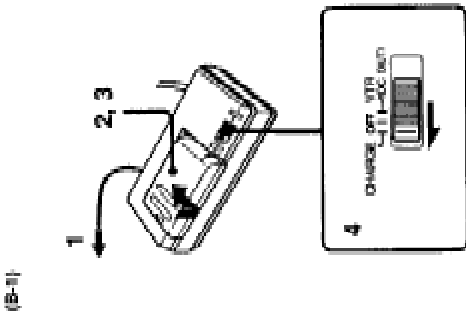
- Step 1**
Charge the battery pack. (B-1)
- 1 Connect the AC power adapter to a wall outlet.
 - 2 Align the groove on the battery pack with that on the AC power adapter.
 - 3 Slide in the battery pack to the right.
 - 4 Set the CHARGE/INTL selector to CHARGE.

Charging time

	BP-55	BP-66H	BP-77	BP-77H
Required charging time	60	100	120	140

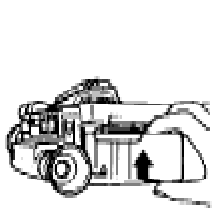
(approx. measured using AC-105)

See the instruction manual of the AC power adapter for details.

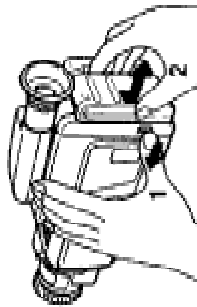


(B-1)

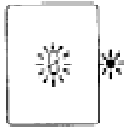
(B-2)



(B-3)



(B-4)



Connecting the Power Source

- Step 2**
Mount the battery pack on the camcorder. (B-2)
- 1 Align the right side of the battery pack with the white line on the camcorder.
 - 2 Slide in the battery pack to the right.
Note: Make sure the battery fits compactly on the resulting surface of the camcorder. Imperfect fit may damage the projections on the camcorder.
- To remove the battery pack. (B-3)
Slide SW III in the arrow direction, and at the same time, slide out the battery pack to the left.

Battery life
A fully charged battery pack lasts for:

	BP-55	BP-66H	BP-77	BP-77H
Battery life	40	75	80	115

(approx. minutes)

When the battery becomes weak, the LCD indication and red lamp blink in the viewfinder. (B-4)
Replace the battery pack with a fully charged one.

- Other options for charging**
- AC-105 AC power adapter:
You can charge two battery packs simultaneously.
 - BP-55, BP-77 portable battery charger:
You can charge a battery pack on 100-240 V AC.
 - DC-103 car battery charger:
You can charge a battery pack by connecting the car battery charger to the cigarette lighter socket.
- If you have an BP-4000
You can use it for long outdoor recording.

Connecting the Power Sources

Using Alkaline Batteries

(B-5)
The EBP-55 or EBP-77 battery case is required (not supplied).

- 1 Insert the RE alkaline batteries into the battery case.

(5 batteries for EBP-55 and 12 batteries for EBP-77)

- 2 Attach the case in the same way as the battery pack.

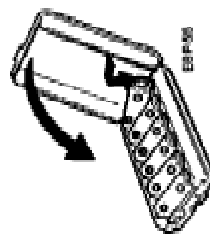
Battery life (when using Sony alkaline batteries)

	EBP-77	EBP-55
Battery life	120	40
	(approx. minutes)	

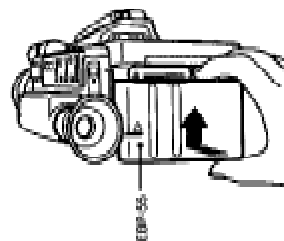
Notes on battery life

- Batteries will not last as long in cold places.
- No indication appears in the viewfinder 15 min. after a weak battery.

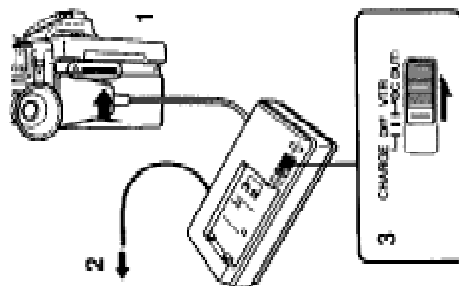
(B-5)



2



(B-6)



10

Connecting the Power Sources

Using Car Battery

(B-7)
The DCP-55/DC pack is required (not supplied).

- 1 Insert the DCC-15B car battery cord supplied with the DCP-55 DC pack into the DC IN jack on the DC pack.

- 2 Align the right side of the DC pack with the line on the camcorder, and slide it in to the right.

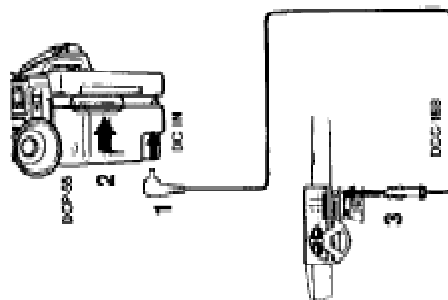
- 3 Connect the DCC-15B car battery cord to the cigarette lighter socket of a car (12 V or 24 V).

To remove the DC pack
While sliding "BATT" on the camcorder, slide out the DC pack.

Other options

The AC-105 AC power adaptor and the DCC-15AE car battery cord can also be used to operate this camcorder at 102 V or 24 V car battery.

(B-7)



Using House Current

(B-8)

- 1 Align the right side of the connecting plate with the line on the camcorder, and slide it in to the right.

- 2 Connect the AC power adaptor to a wall outlet.

- 3 Set the CHARGE/VTR selector of the AC power adaptor to VTR.
See the instruction manual of the AC power adaptor for details.

Other option

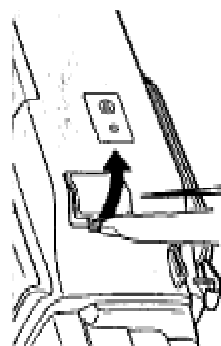
The AC-105 AC power adaptor can also be used.

11

Inserting the Lithium Battery

Setting the Date and Time

(D-1)



(D-1)

This camcorder uses a lithium battery to activate the clock.
Before operating it for the first time, attach the power source and then insert the supplied lithium battery.

- 1 Open the cover of the lithium battery compartment on the bottom.
- 2 Insert the supplied CR2025 lithium battery with the + side facing out.

- 3 Close the cover.

To remove the lithium battery (D-2)
Press the side of the battery in the direction as indicated for installation.



(D-2)



Note on lithium battery life

The battery will last for approximately 1 year in normal operation.

When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for about 5 seconds when POWER is set to CAM/REDA. In this case, replace the battery with a Sony CR2025 or a battery with one of the same type and rating.

After replacing the battery, readjust the date and time. If the battery is replaced while the battery plate is attached, the readjustment is not necessary.

Caution

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to remove a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metal tweezers, otherwise a short circuit may occur.
- Battery may explode if misused.
- Do not recharge, disassemble or dispose of lithium.

15

Setting the Date and Time

(D-3)

(D-3)

- 1 Make sure that a power source is connected, set POWER to CAMERA, and slide STANDBY up.

- 2 Press DATE and TIME simultaneously for more than 3 seconds until the date indication appears in the viewfinder. DATE now functions as + (to advance numbers) and TIME functions as NEXT (to execute).

- 3 Adjust the year, month, day, hour and minute, in that order.
First adjust the leading digits with +, and then press NEXT.

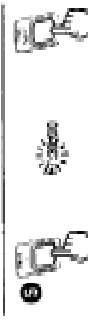
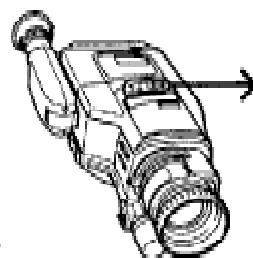
- 4 Press NEXT to set the second.
The clock starts operating.

To correct date and time setting
Repeat steps 2 to 4.

To advance the digital timer
Keep + pressed.

To check the preset date and time
Press DATE or TIME. When you press the same button again, the indication goes off.

(D-3)



4



16

Looking over such items as

Individuals who are not eligible for the following:

1. **Author(s)**: [Name(s)]
 2. **Title**: [Title]
 3. **Journal**: [Journal Name]
 4. **Volume**: [Volume]
 5. **Issue**: [Issue]
 6. **Pages**: [Page Range]
 7. **Year**: [Year]

Autodesk reserves the right to modify or discontinue the product without notice.

Write Balance:

4. No indication (outlet) → WOLD → +

Shutter Speed

Indication	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397
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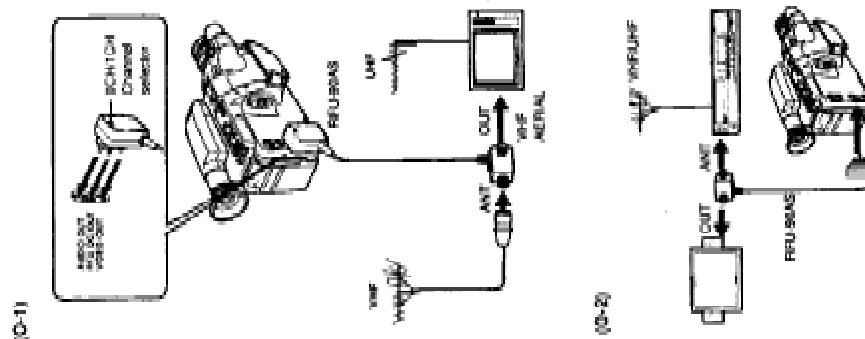
Franklin D. Wright

1. **Introduction**

Others will start the history of the building

When you match the velocity at the same time. The white balance, focus and exposure are automatically adjusted and the shutter speed is set to normal speed (1/50) regardless of the position of the shutter (C or A) cover.

- As long as you do not remove the battery, even if you set **POWER** to **OFF**, the previous settings are stored.
- If you close the **ALTIM LOCK** cover after you have made a manual adjustment and open it again, the previous settings for manual adjustment will be later recalled.



To view the playback picture on the TV screen, the camcorder and the TV and/or VTR must be connected properly. Check the following connecting examples and go to the appropriate section to make the necessary connections.

Case 1 Connecting the camcorder directly to the TV without using a video input leads.

Case 2: Connecting the camcorder directly to the TV with video/audio input jacks.

**Case 1: Connecting a TV without
Video Audio Input Jacks**

For the contents supplied with the RFLU-010.

500

Decoding an RFU adapter and a TV (C-1)
Use the supplied RFU adapter.

- Use the supplied RFU adaptor.
Make sure that the TV is turned off.
Usually keep the RFU adaptor and the TV
connected

1000

clustering the TV
adjust one of the TV programme positions so that
you can receive the commentator's playback
normal

- Select the RF and select on the adaptor to DCH or KCH, which ever is not active in your area.

your TV is connected with a VCR

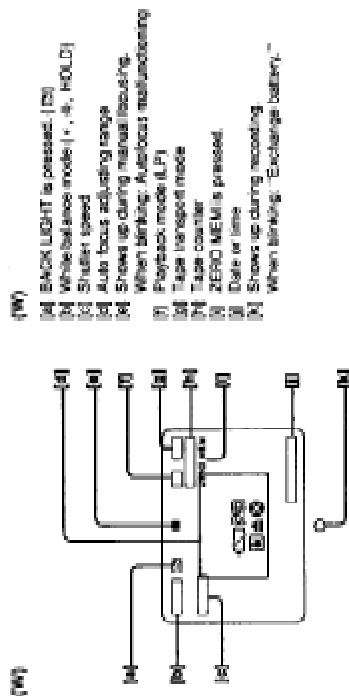
Treasury Check

If an infection blinks in the viewfinder screen or a caution lamp on the main unit blinks, check the following table.

☐ Display notes ☐ Fast printing

	Symptom	Cause	Corrective actions
Camera operation VTR operation	LO	The battery is weak.	Replace a charged one.
	Battery lamp		
	LO	The battery is used up.	Use a charged battery.
	Battery lamp		
Camera operation	ERR A	The tape is at its end.	Use a new tape.
	Battery lamp		
	ERR	The tape is near its end.	Prepare a new one.
	Battery lamp		
Camera operation VTR operation	ERR	No tape is inserted.	Insert a tape.
	ERR A	The tab on the tape is not fixed.	Slide the tab.
	ERR or A	Magnetic contamination has occurred.	Remove the tape and leave the camcorder for at least an hour.
	DEW lamp		
Camera operation VTR operation	A	The tape off-line head is clogged.	Clean the head using the Sony MR-250-LH cleaning tape.
	Caution lamp		
	A	Other troubles may occur.	Consult your nearest Sony dealer.
	Caution lamp		
Camera operation VTR operation	"00:00" blink for 5 seconds in the viewfinder	The lithium battery is not installed.	Install the lithium battery.
	Warning POWER is CAUTIONAL	The lithium battery is exhausted.	
	The current time (alarm for 5 seconds in the viewfinder) after setting POWER to CHARGE	The lithium battery is weak.	Use a new battery.

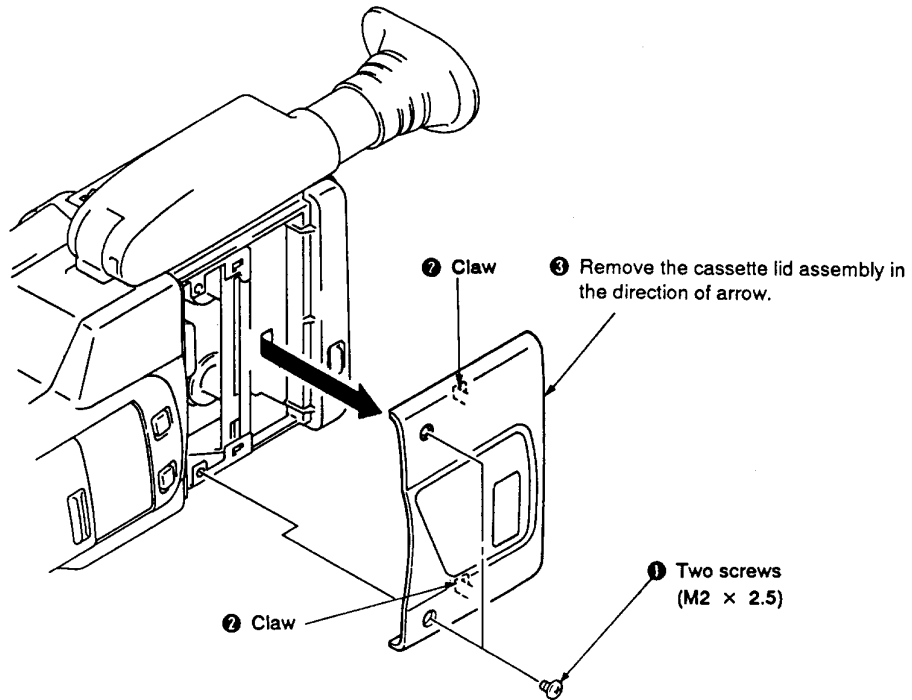
Indications inside the Viewfinder



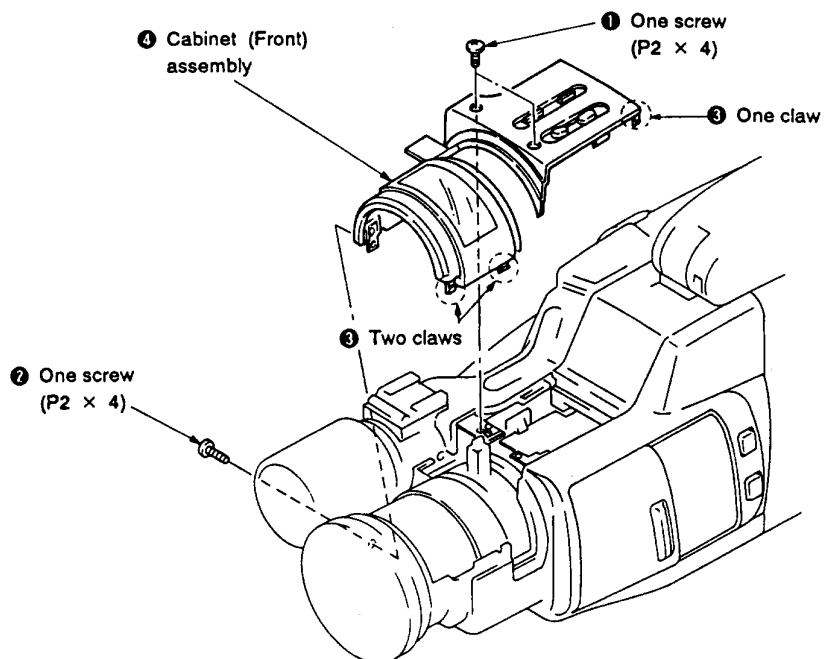
- (10)
- [4] BACK LIGHT is pressed. [70]
 - [5] Wheel (all sides mode) (+, -, HOLD)
 - [6] Shutter speed
 - [7] Auto focus adjusting range
 - [8] Shows up during manual focusing.
- When blinking, Audio/beat malfunctioning
- [9] Playback mode (L/F)
 - [10] Tape transport mode
 - [11] Tape counter
 - [12] ZERO MEM is pressed.
 - [13] Date or time
 - [14] Shows up during recording
- When blinking, "Exchange battery."

SECTION 2 DISASSEMBLY

2-1. REMOVAL OF CASSETTE LID ASSEMBLY

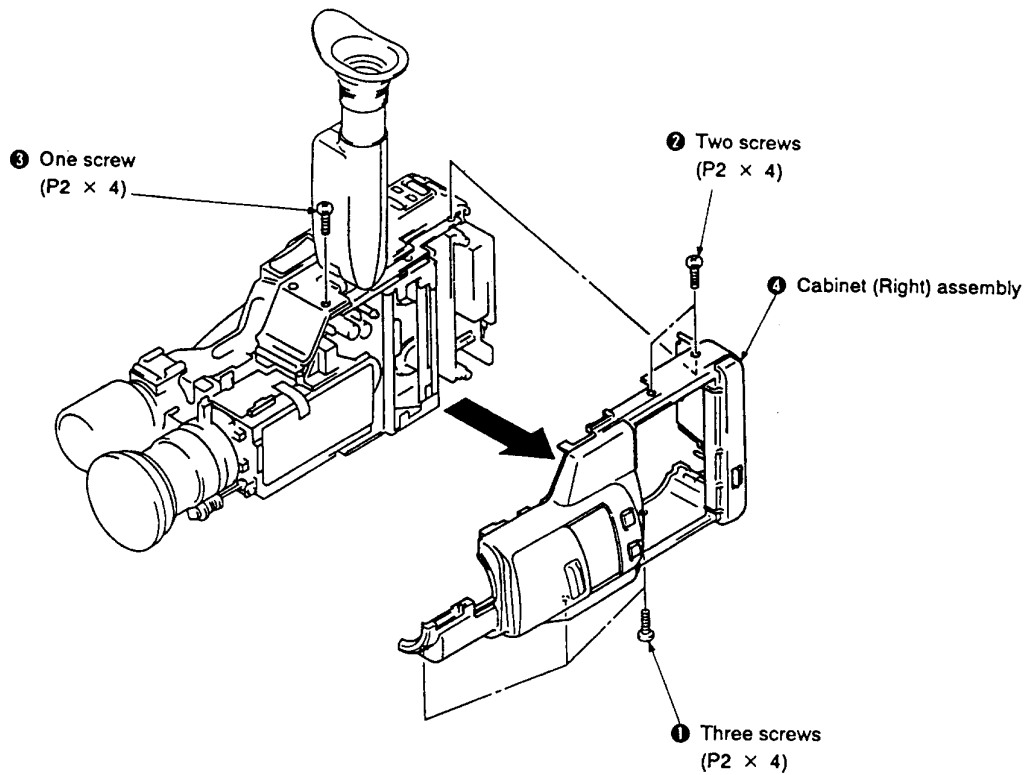


2-2. REMOVAL OF CABINET (FRONT) ASSEMBLY

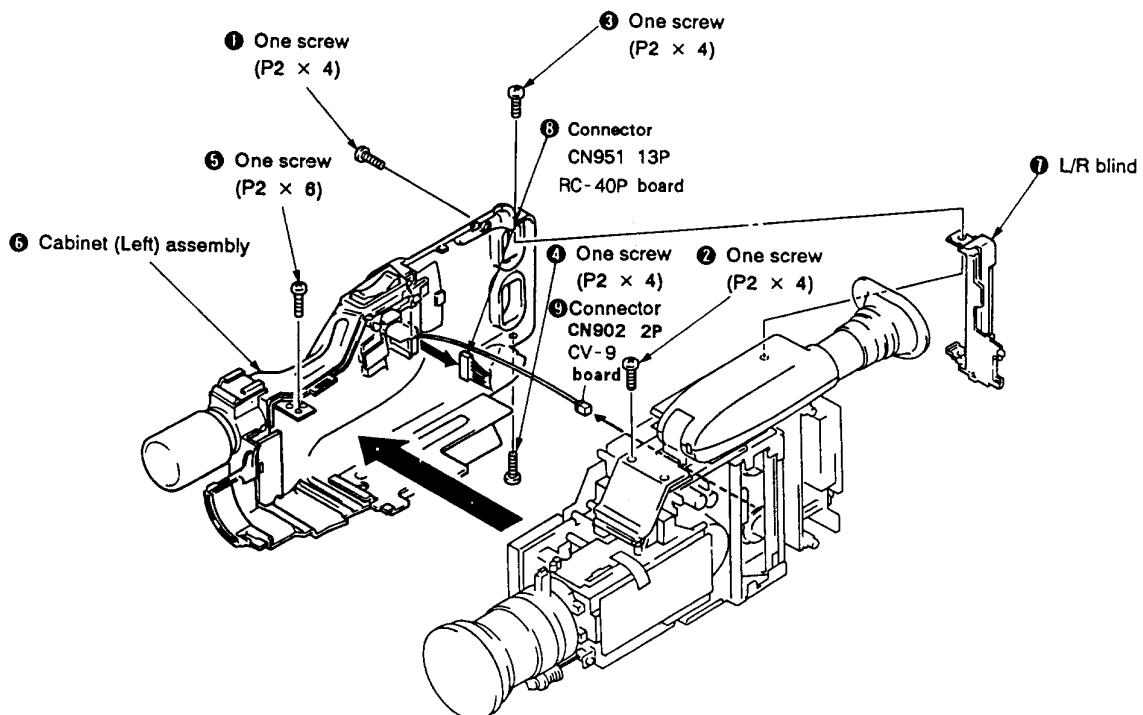


2-3. REMOVAL OF CABINET (RIGHT) ASSEMBLY

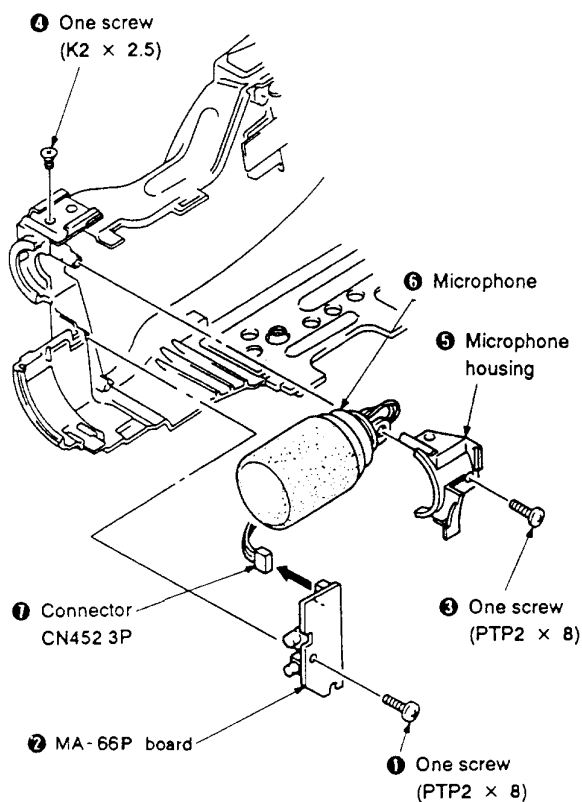
Note: Perform this servicing with EVF raise as the figure below.



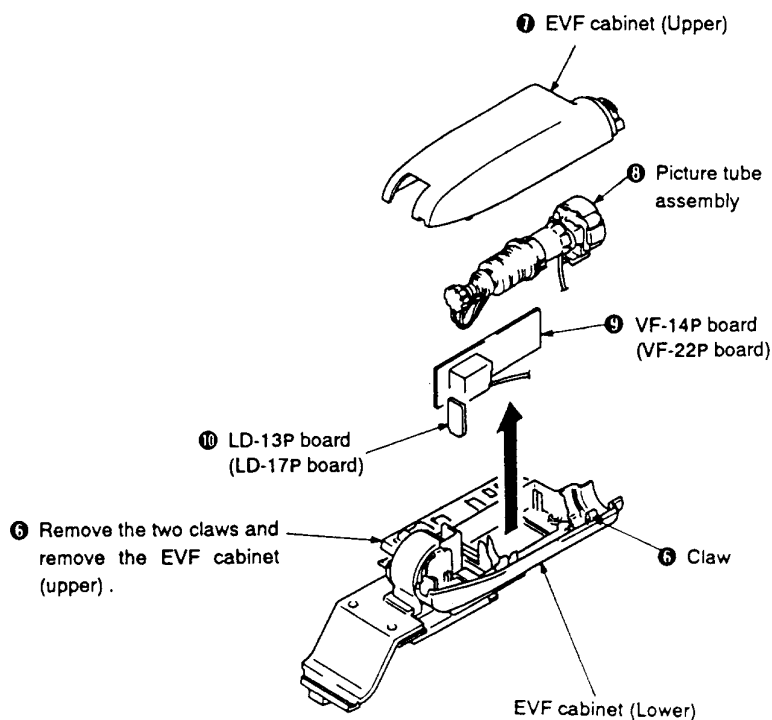
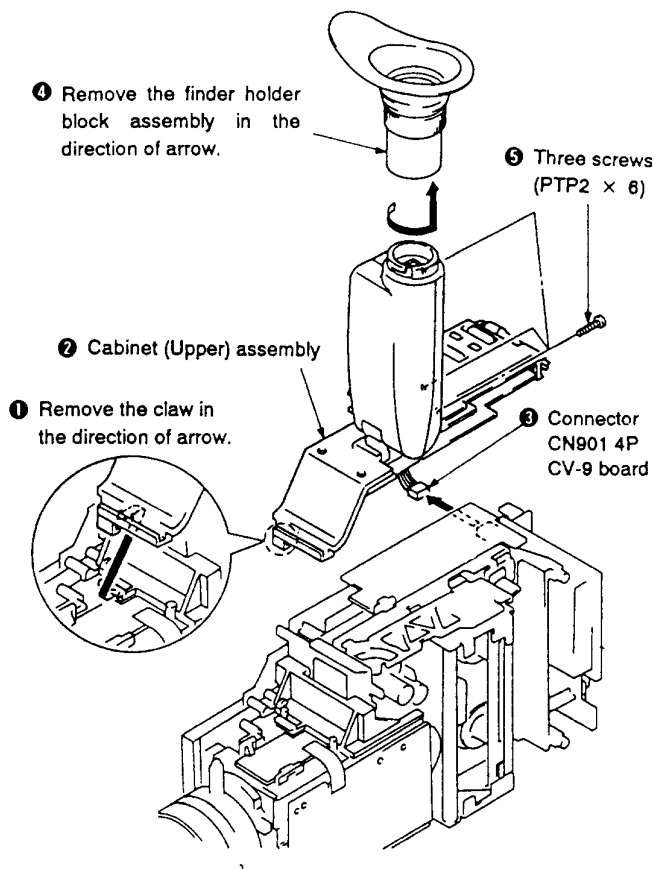
2-4. REMOVAL OF CABINET (LEFT) ASSEMBLY



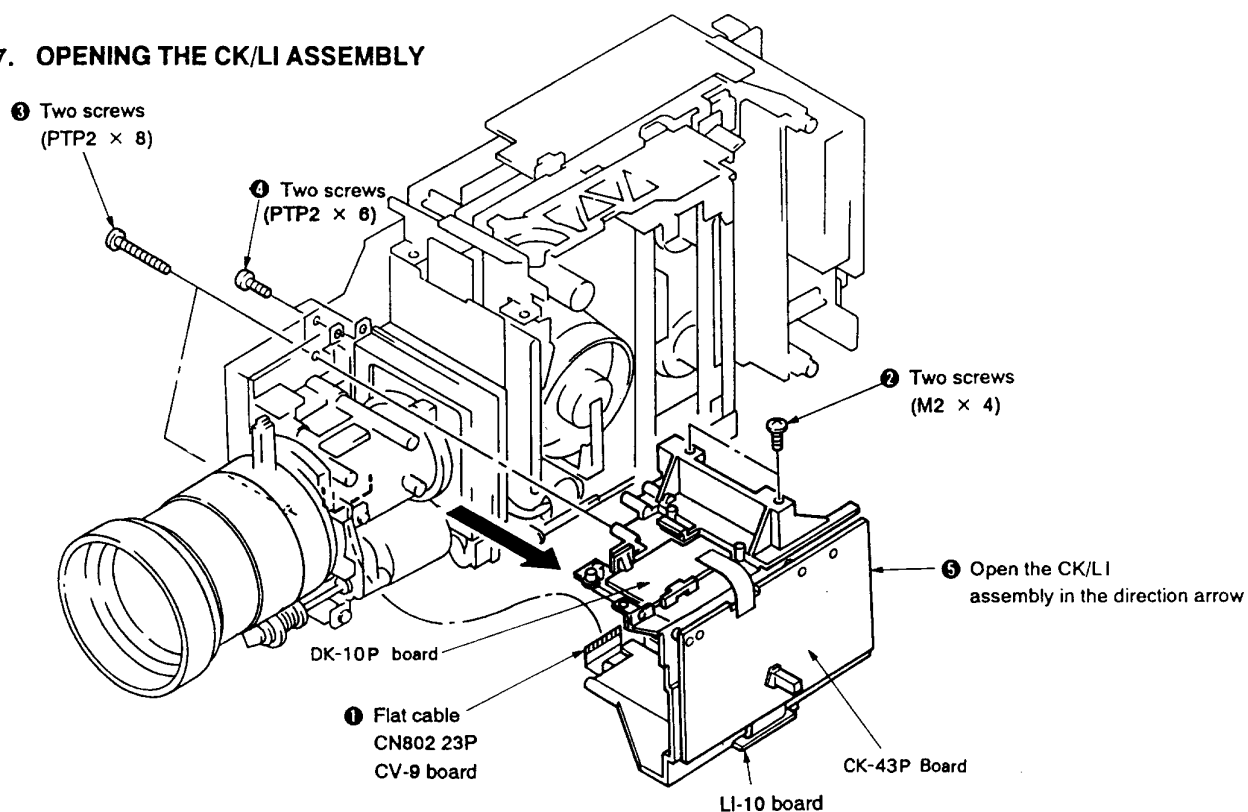
2-5. REMOVAL OF MICROPHONE



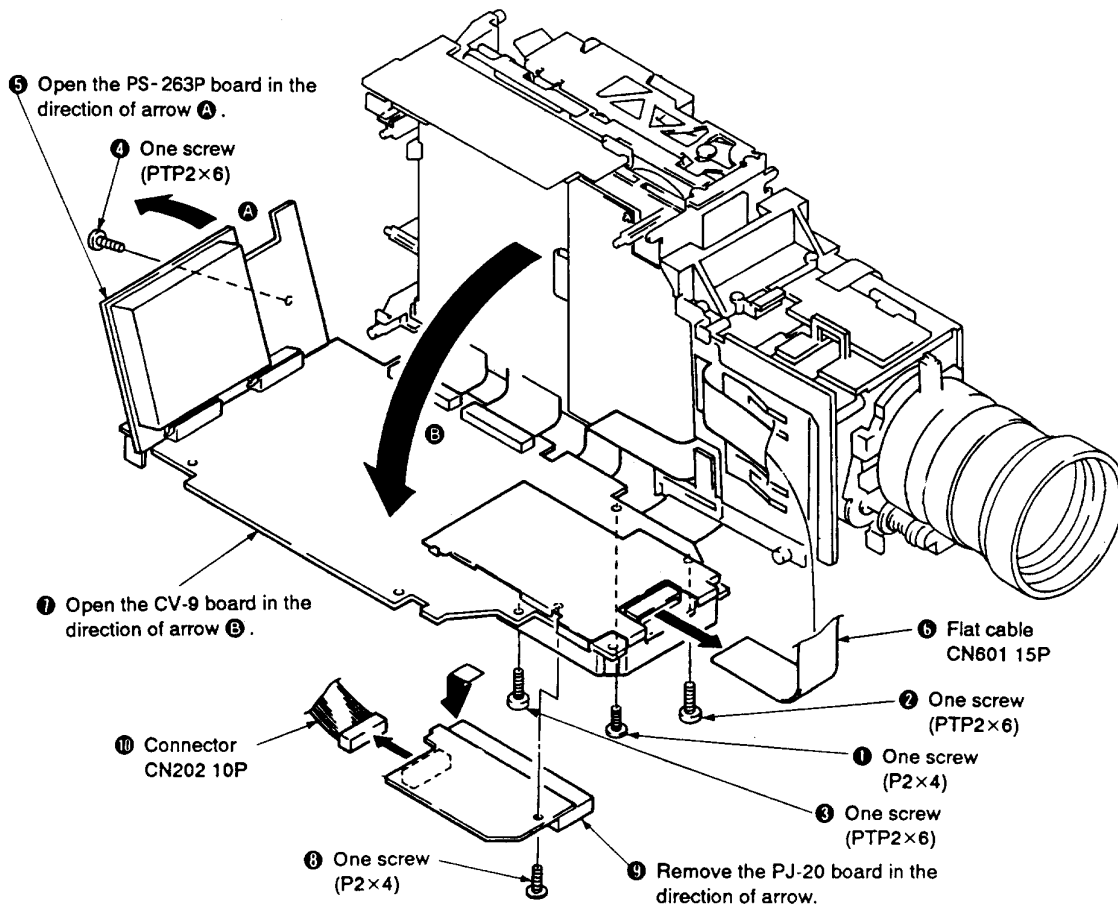
2-6. REMOVAL OF CABINET (UPPER) ASSEMBLY AND EVF



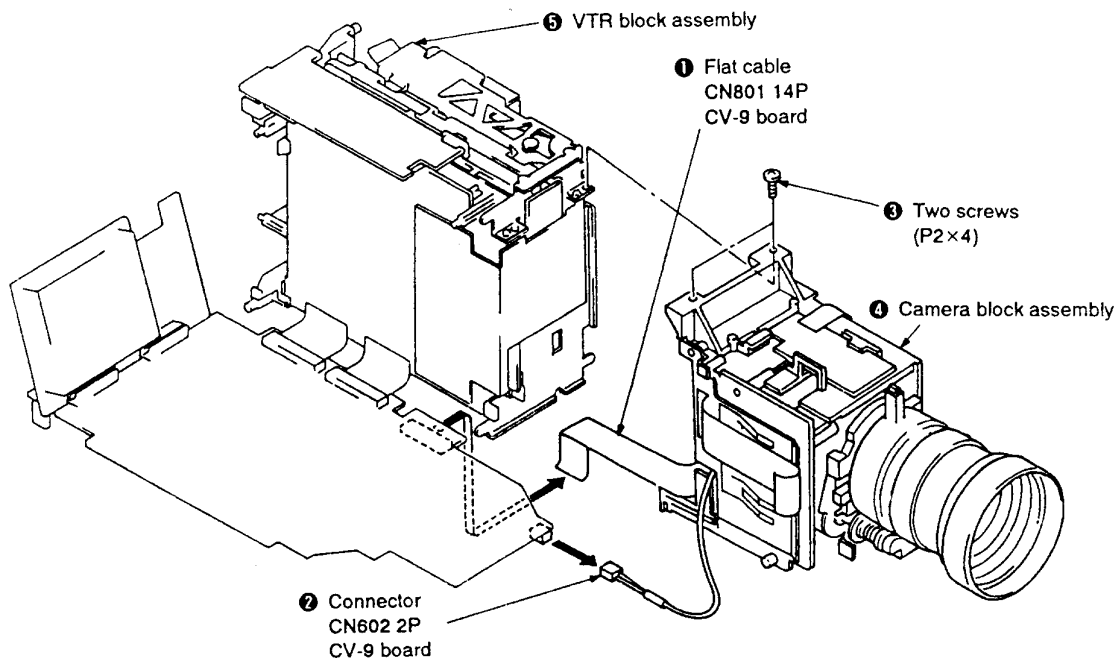
2-7. OPENING THE CK/LI ASSEMBLY



2-8. OPENING THE PS-263P AND CV-9 BOARDS, AND REMOVAL OF PJ-20 BOARD

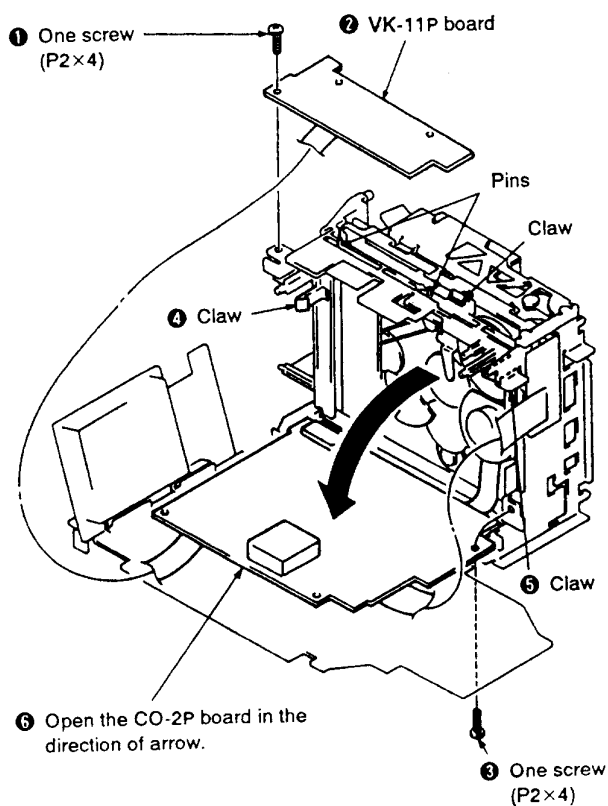


2-9. SEPARATING THE CAMERA AND VTR BLOCKS

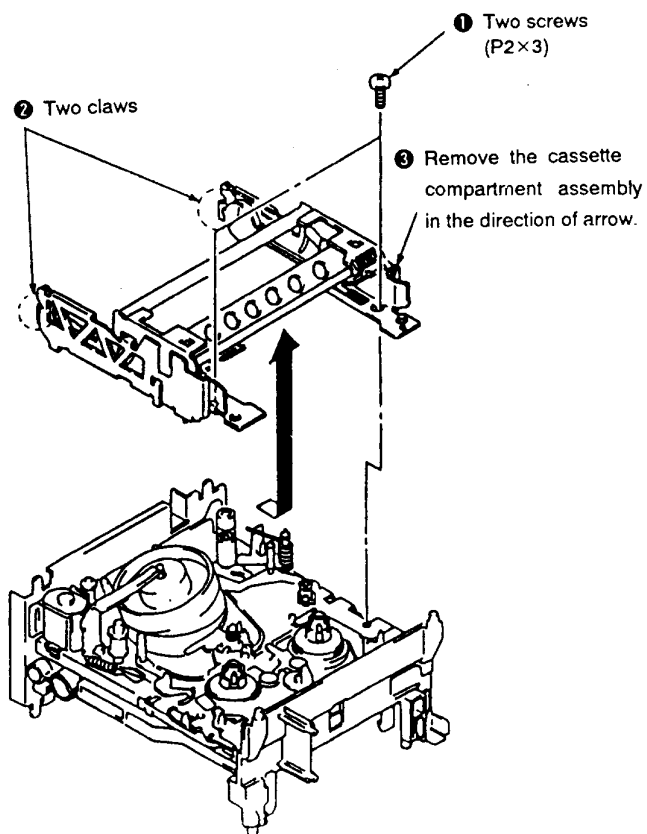


2-10. OPENING THE CO-2P AND VK-11P BOARDS

Notes: 1) Pay attention to two pins and a claw when removing the VK-11P board.
2) Care for the FE shield which is adhered to the RP amplifier shield case with a double coated tape.

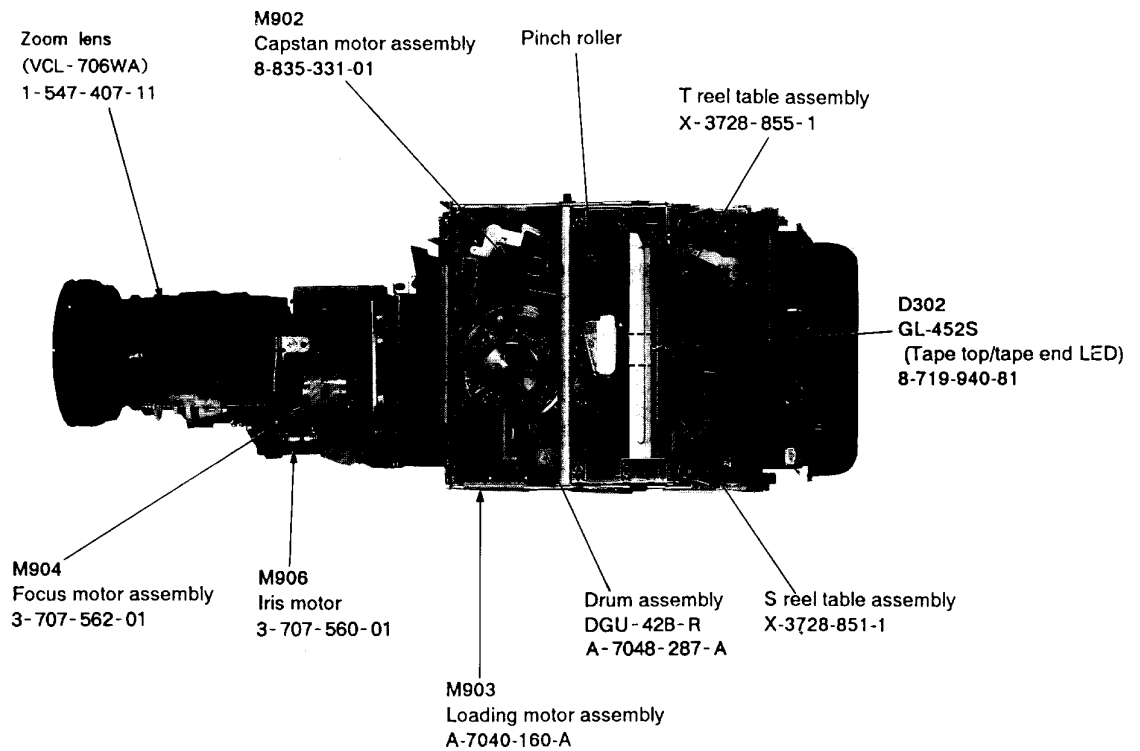


2-11. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

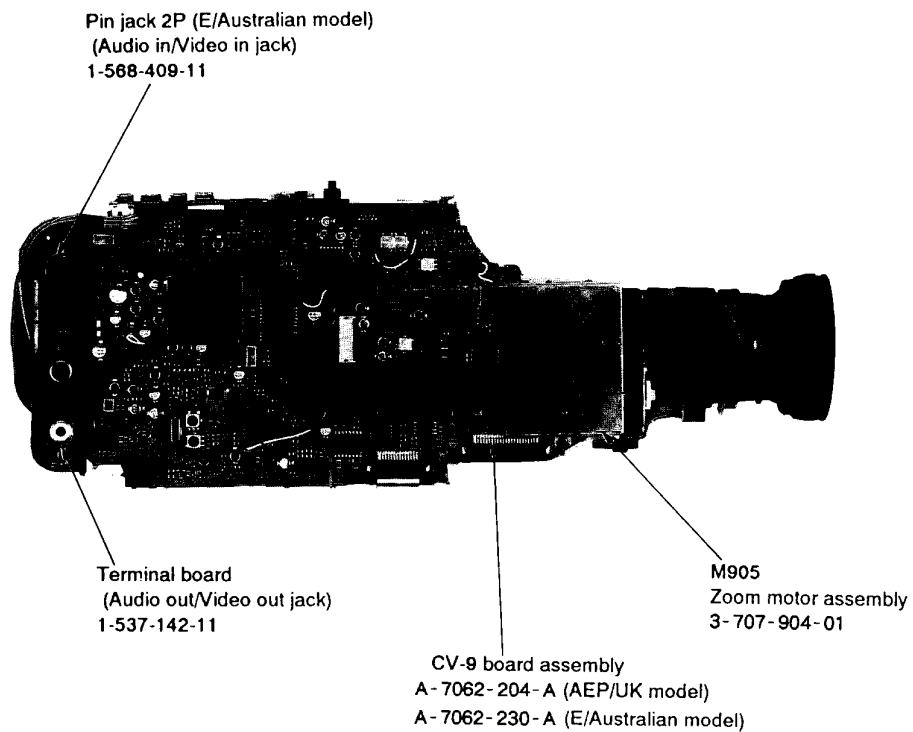


2-12. INTERNAL VIEW

– Right Side –

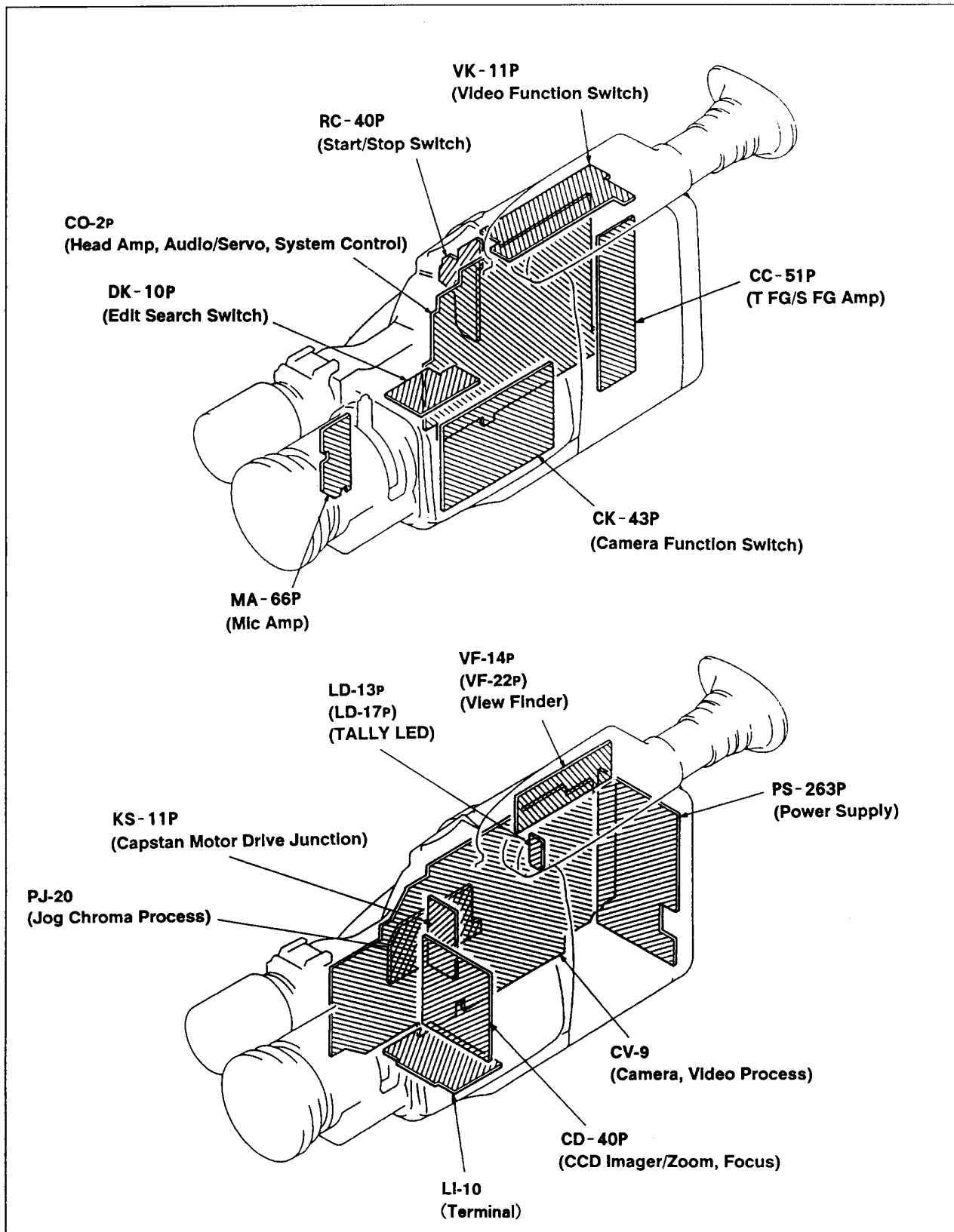


– Left Side –

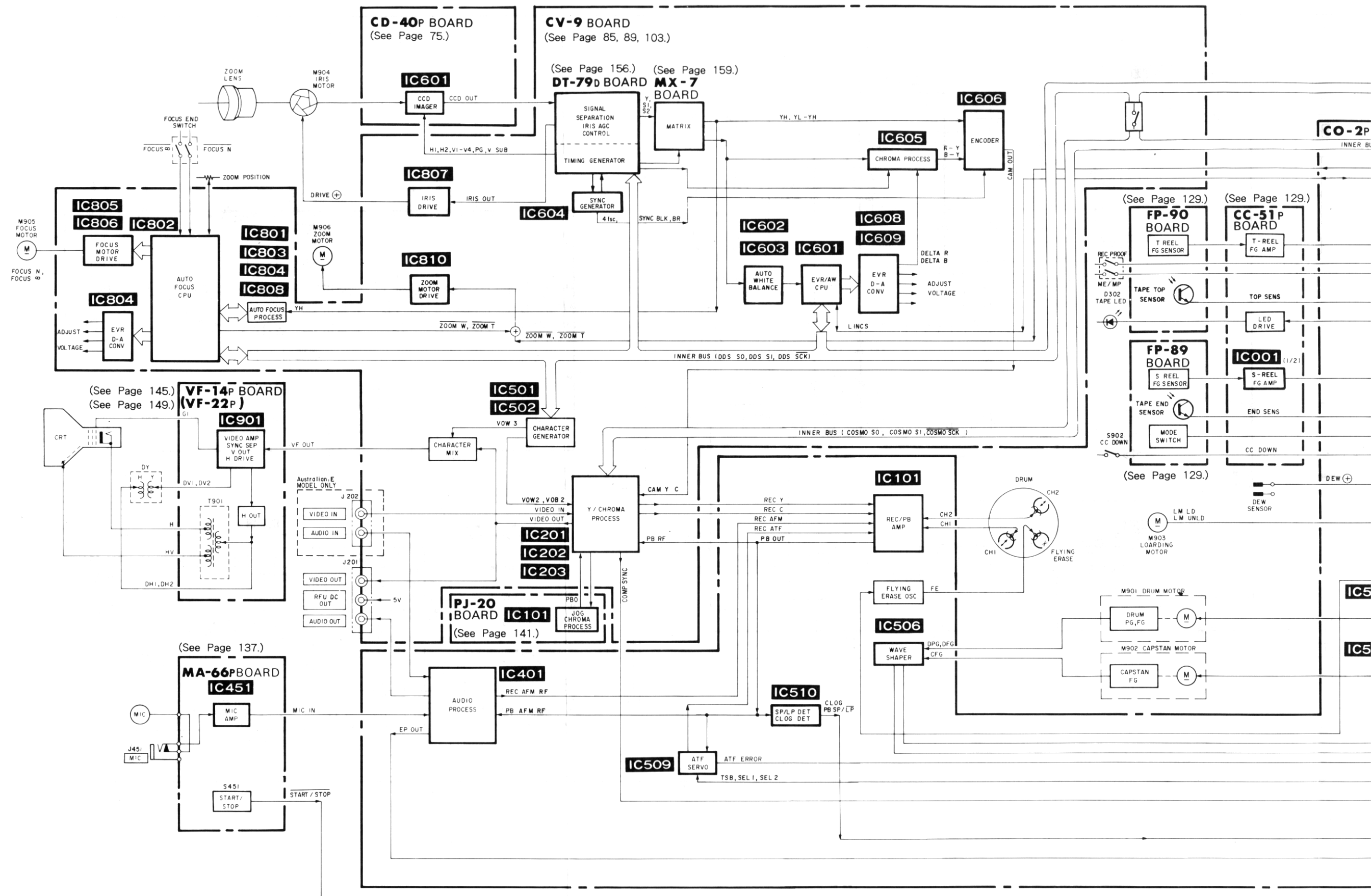


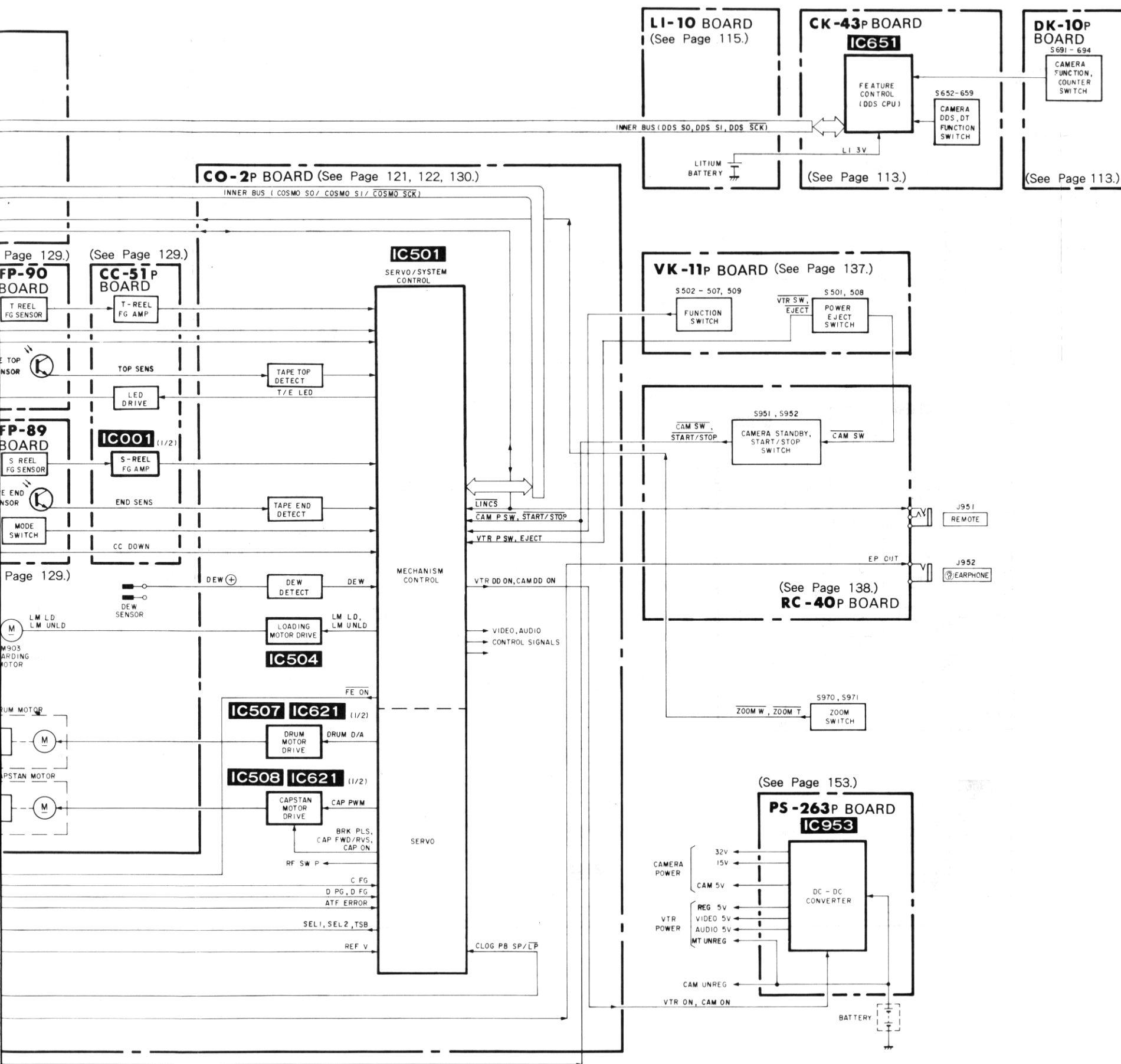
SECTION 3 DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

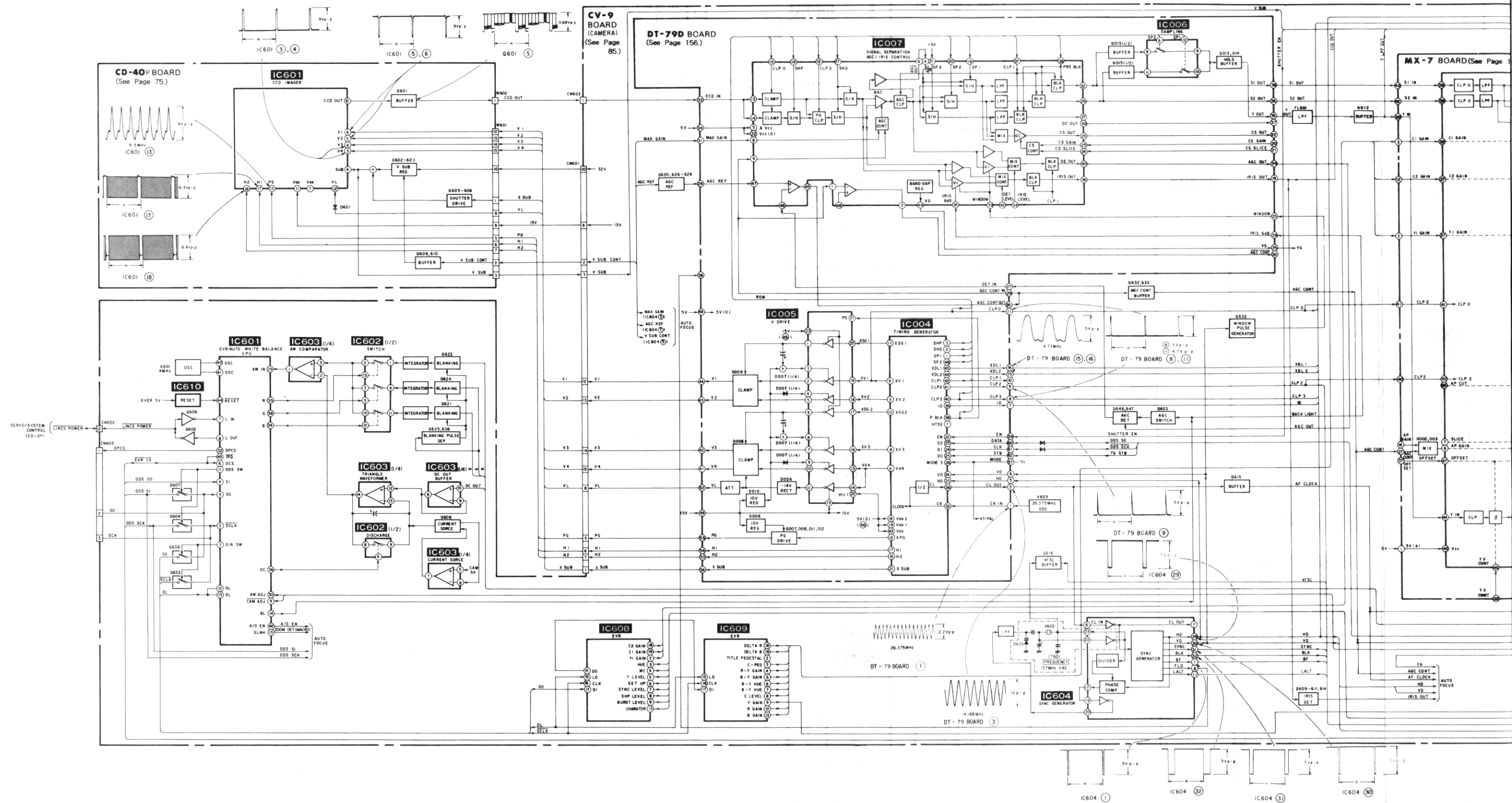


3-2. OVERALL BLOCK DIAGRAM

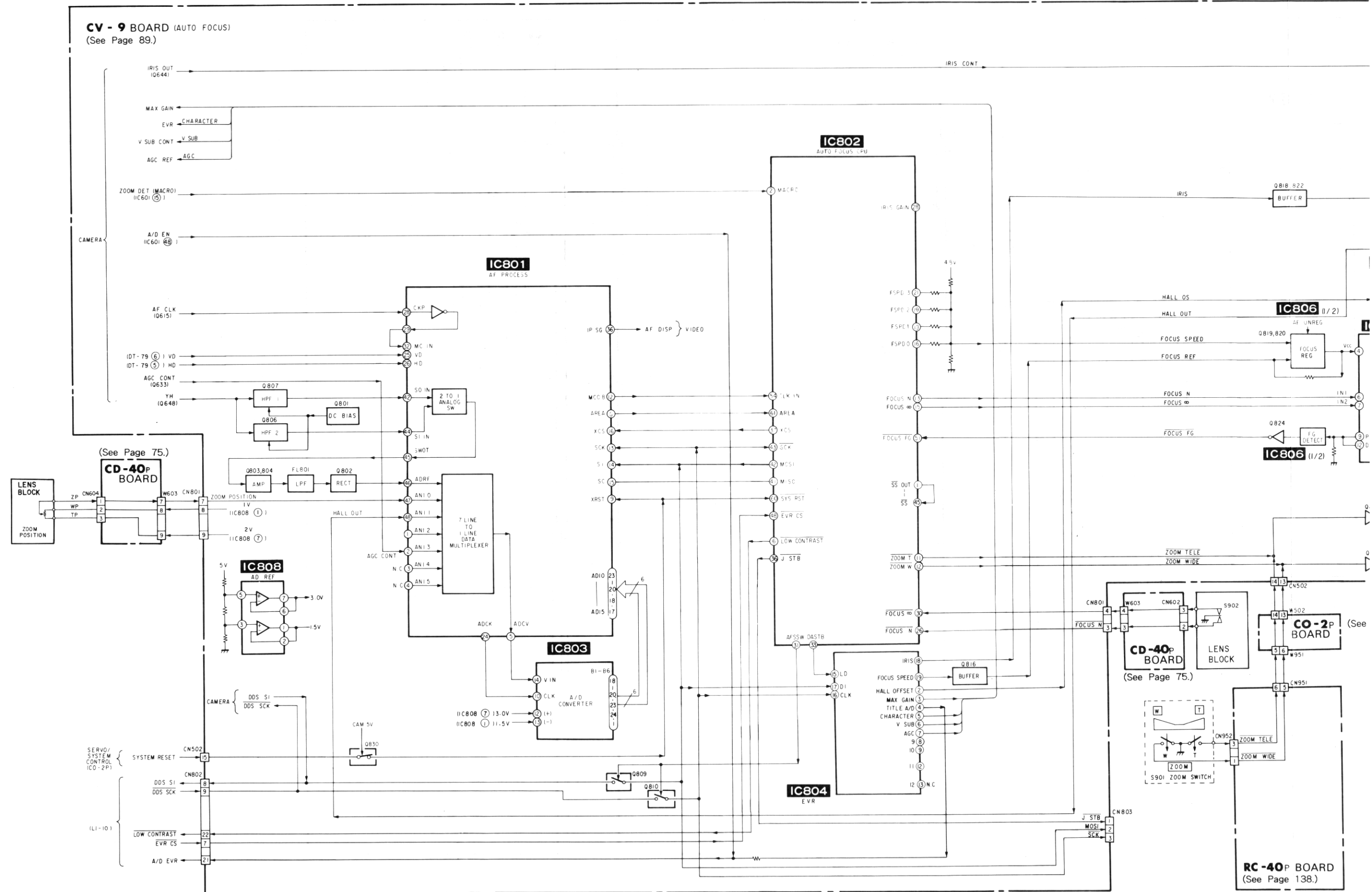


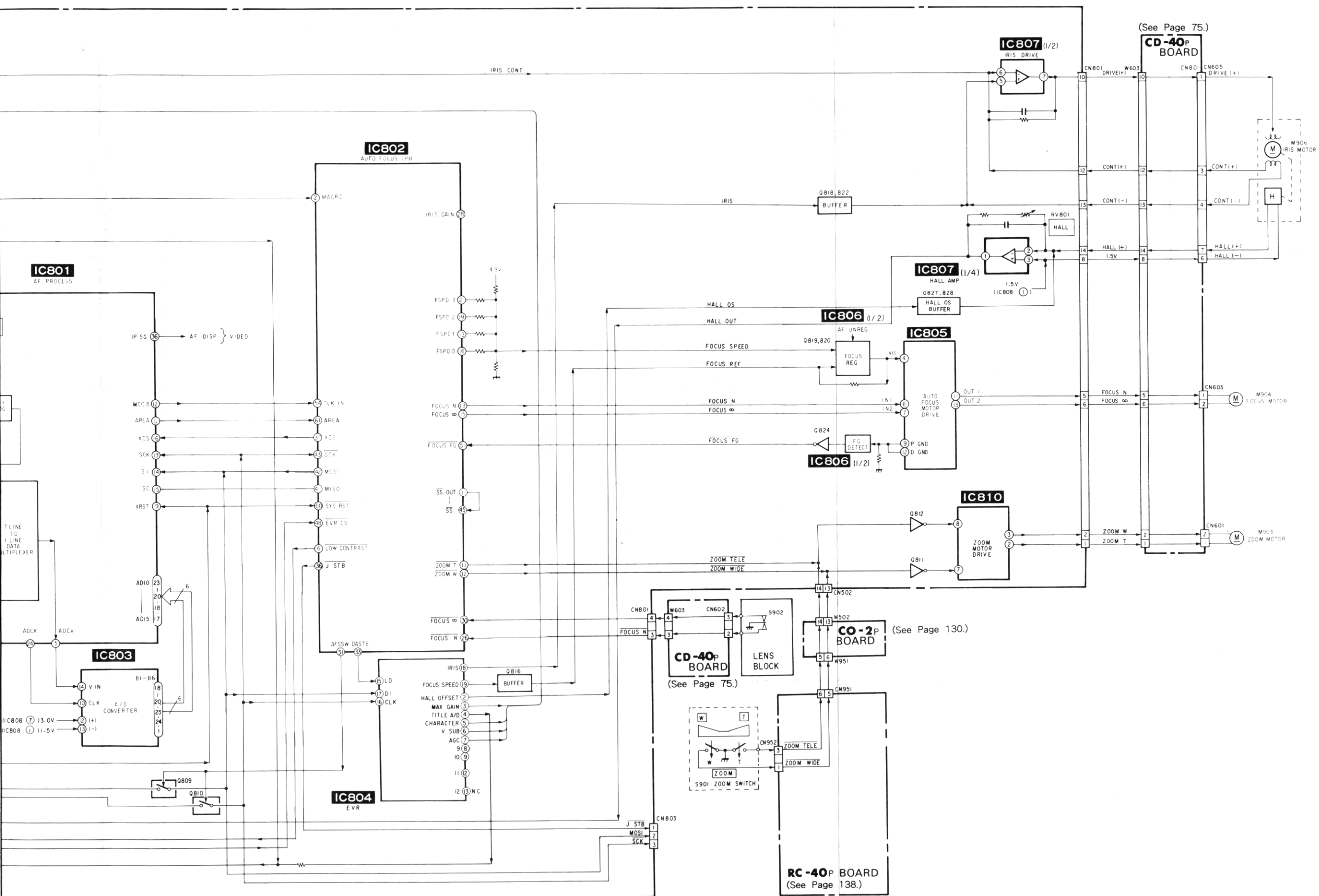


3-3. CAMERA BLOCK DIAGRAM

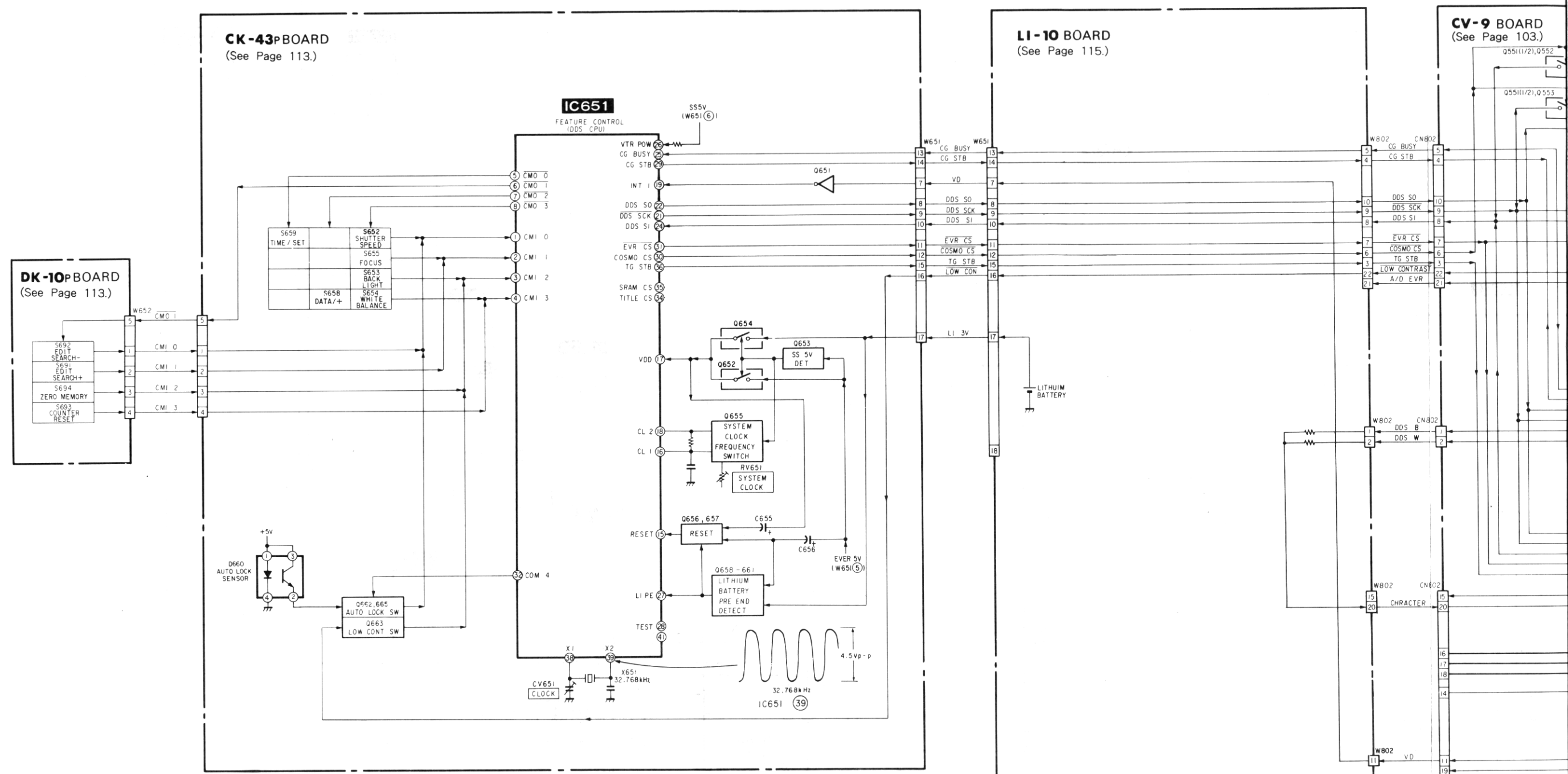


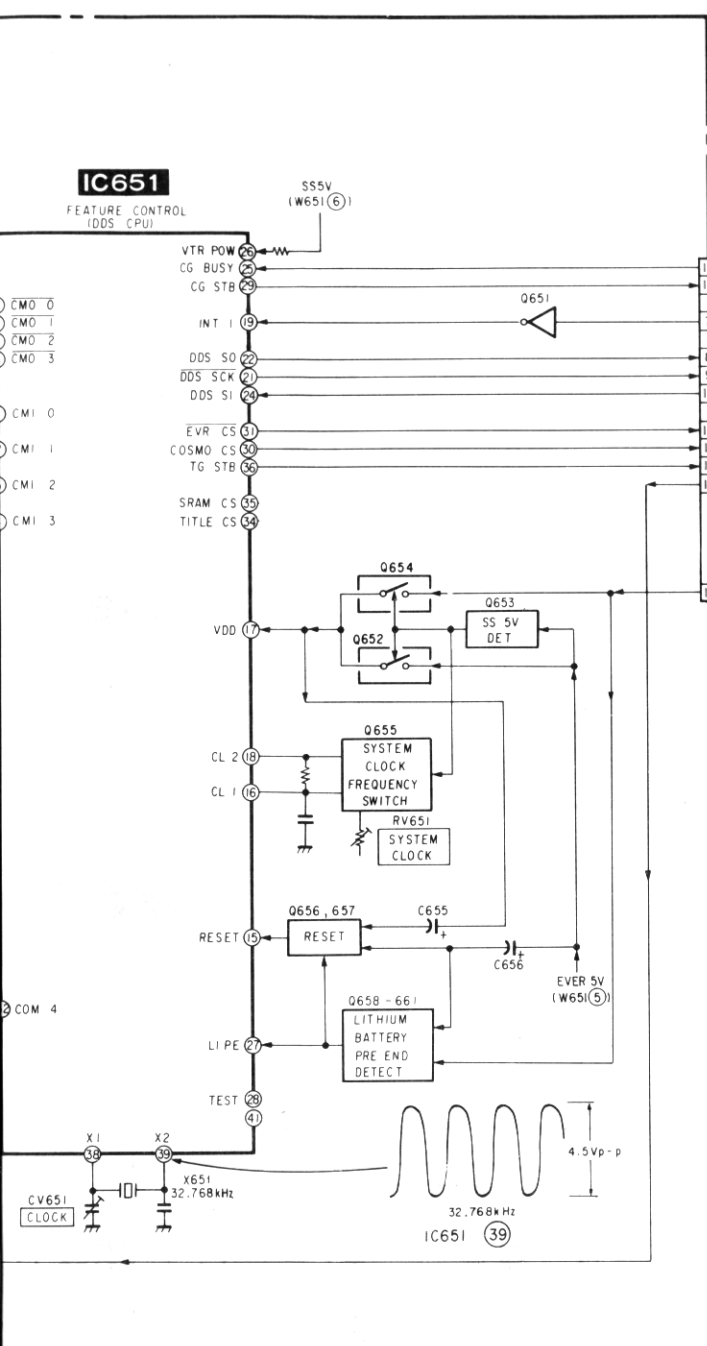
3-4. AUTO FOCUS BLOCK DIAGRAM



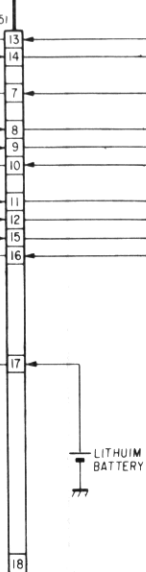


3-5. CAMERA FUNCTION BLOCK DIAGRAM

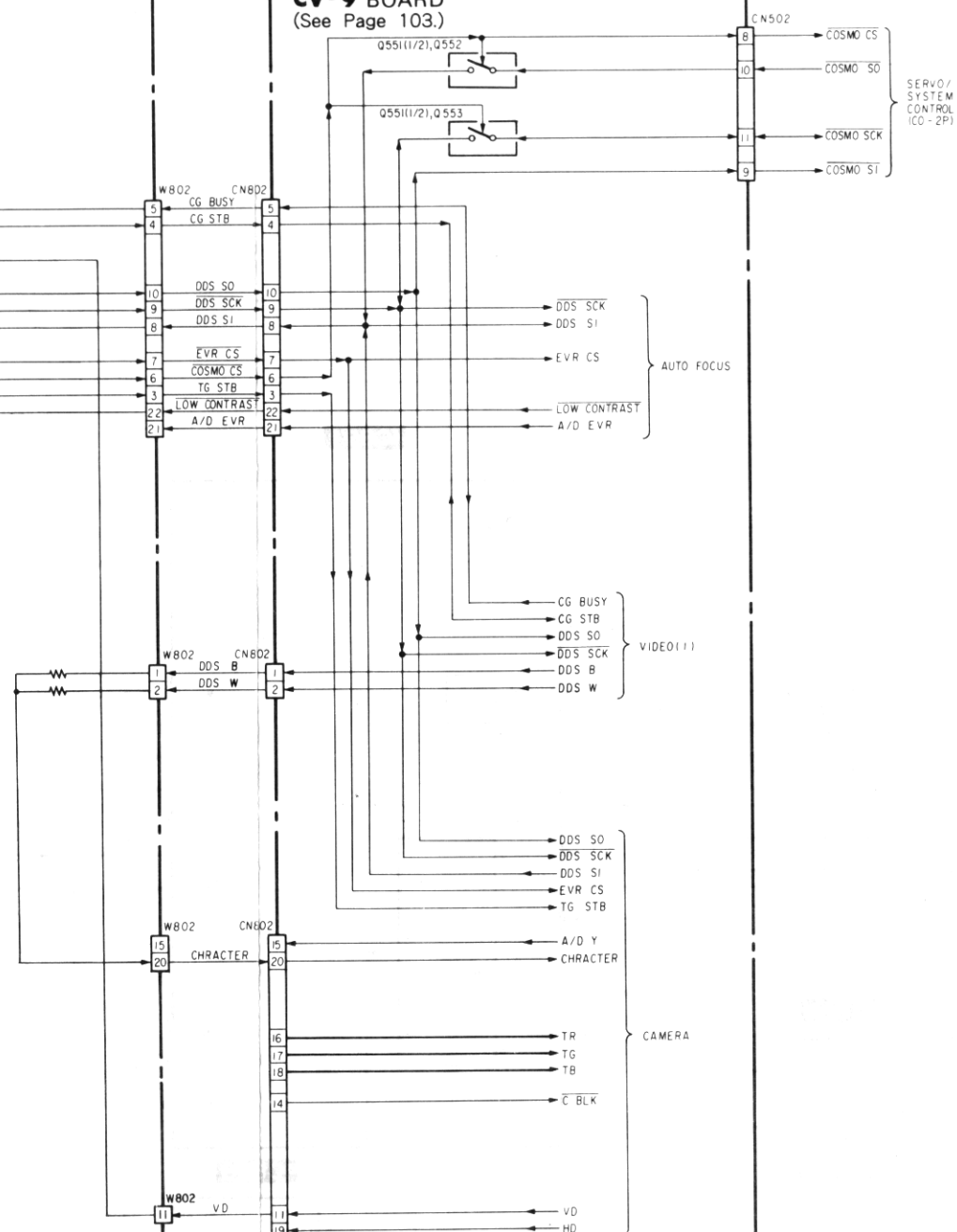




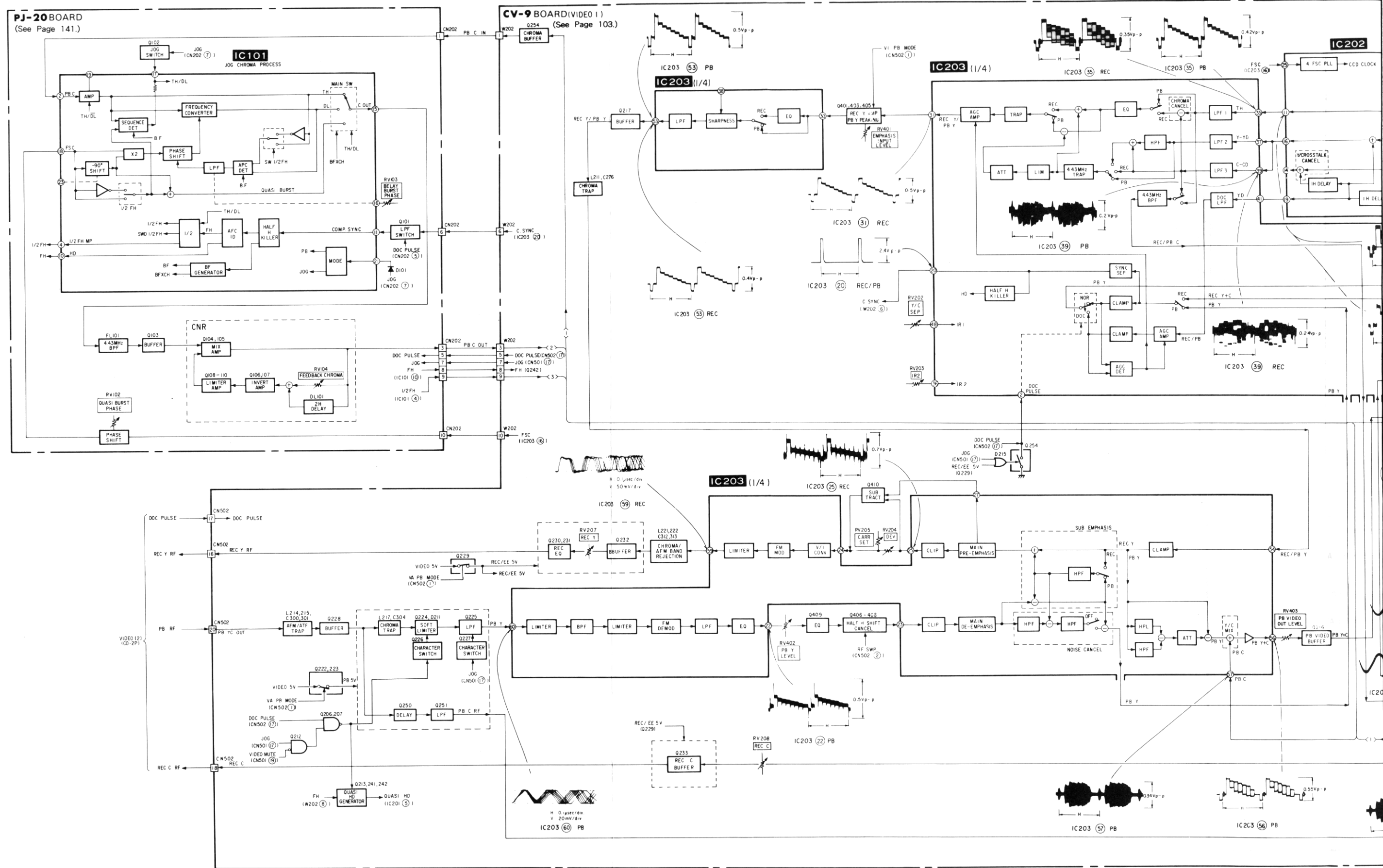
LI-10 BOARD
(See Page 115.)

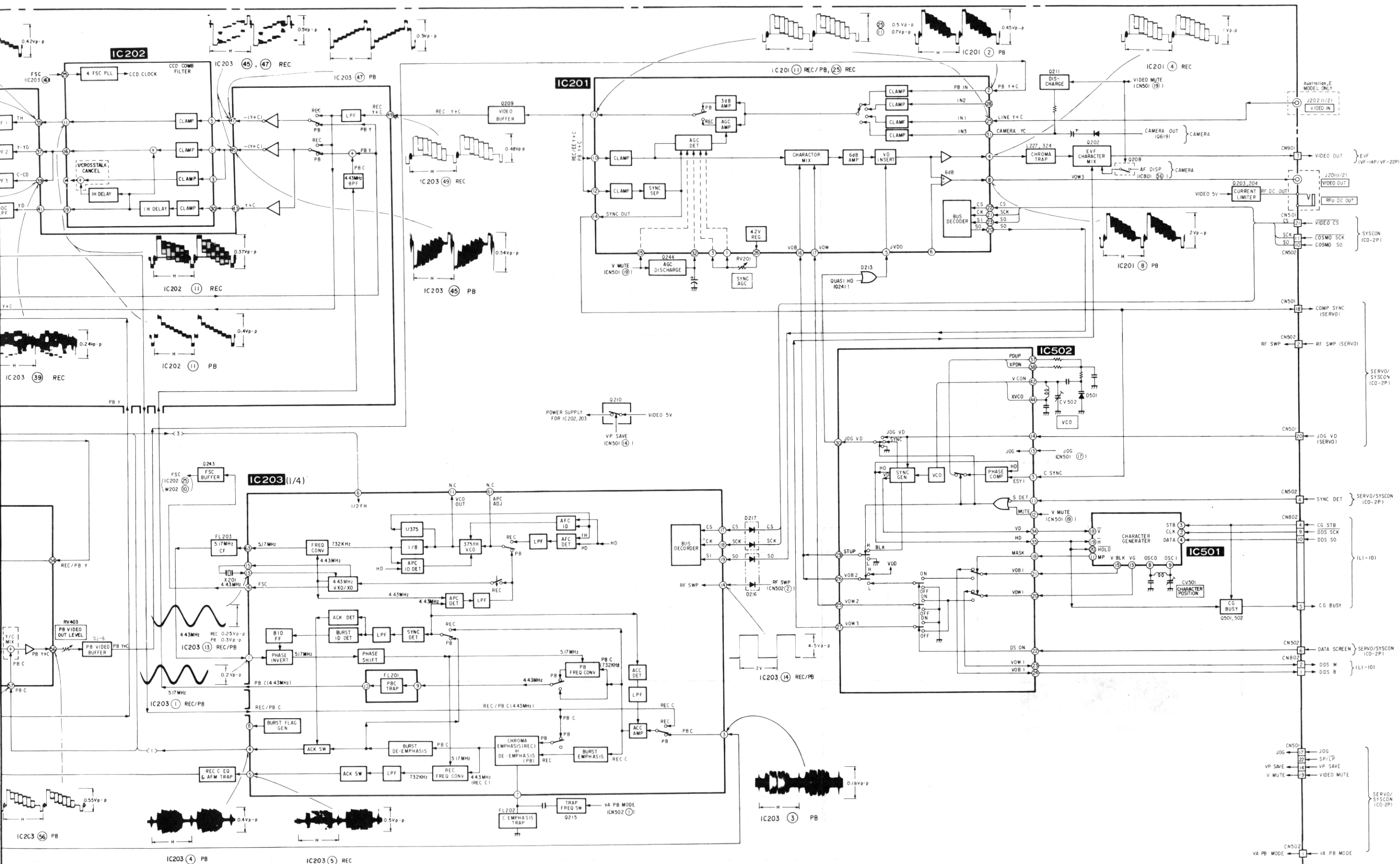


CV-9 BOARD
(See Page 103.)

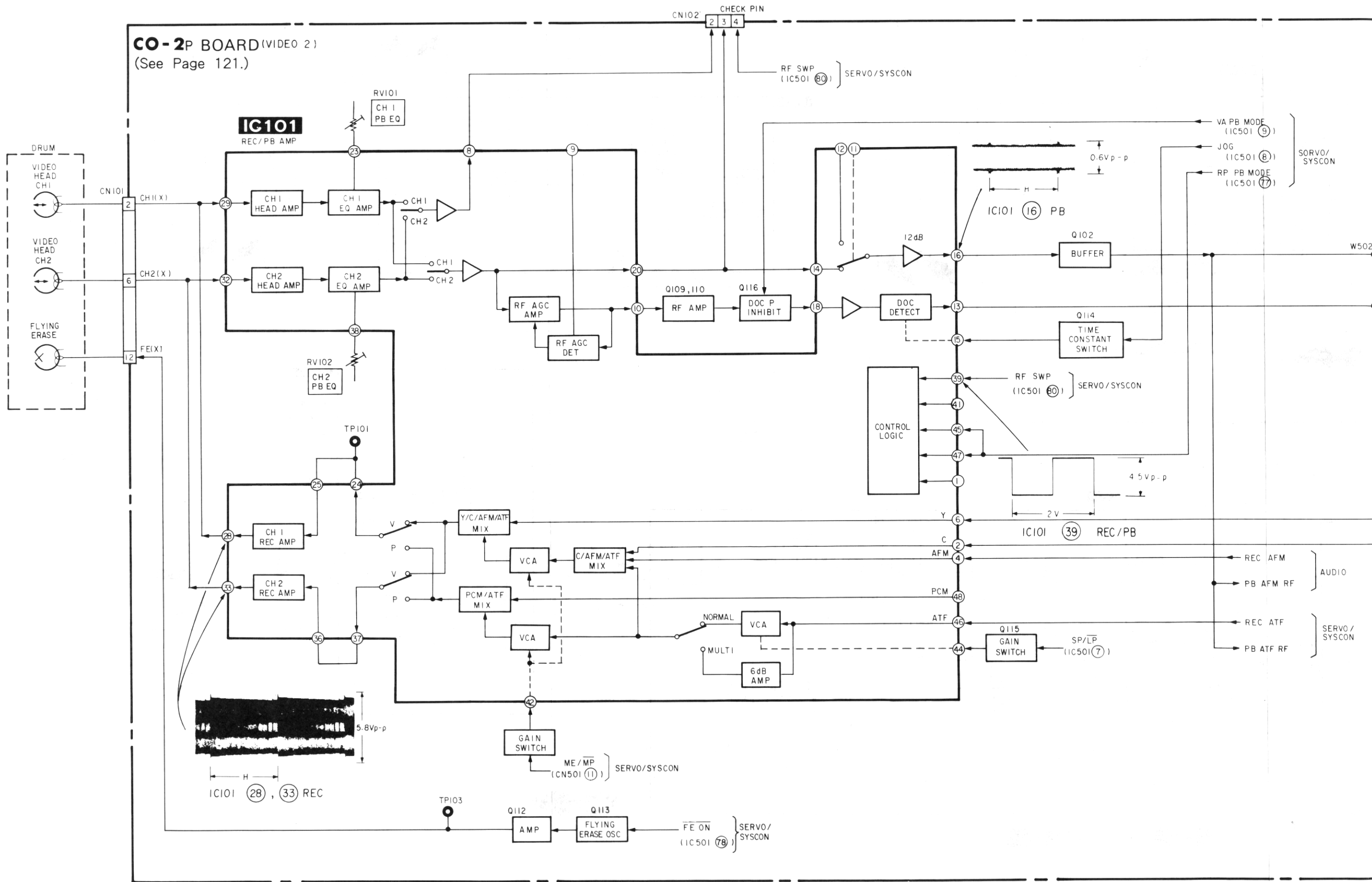


3-6. VIDEO BLOCK DIAGRAM(1)



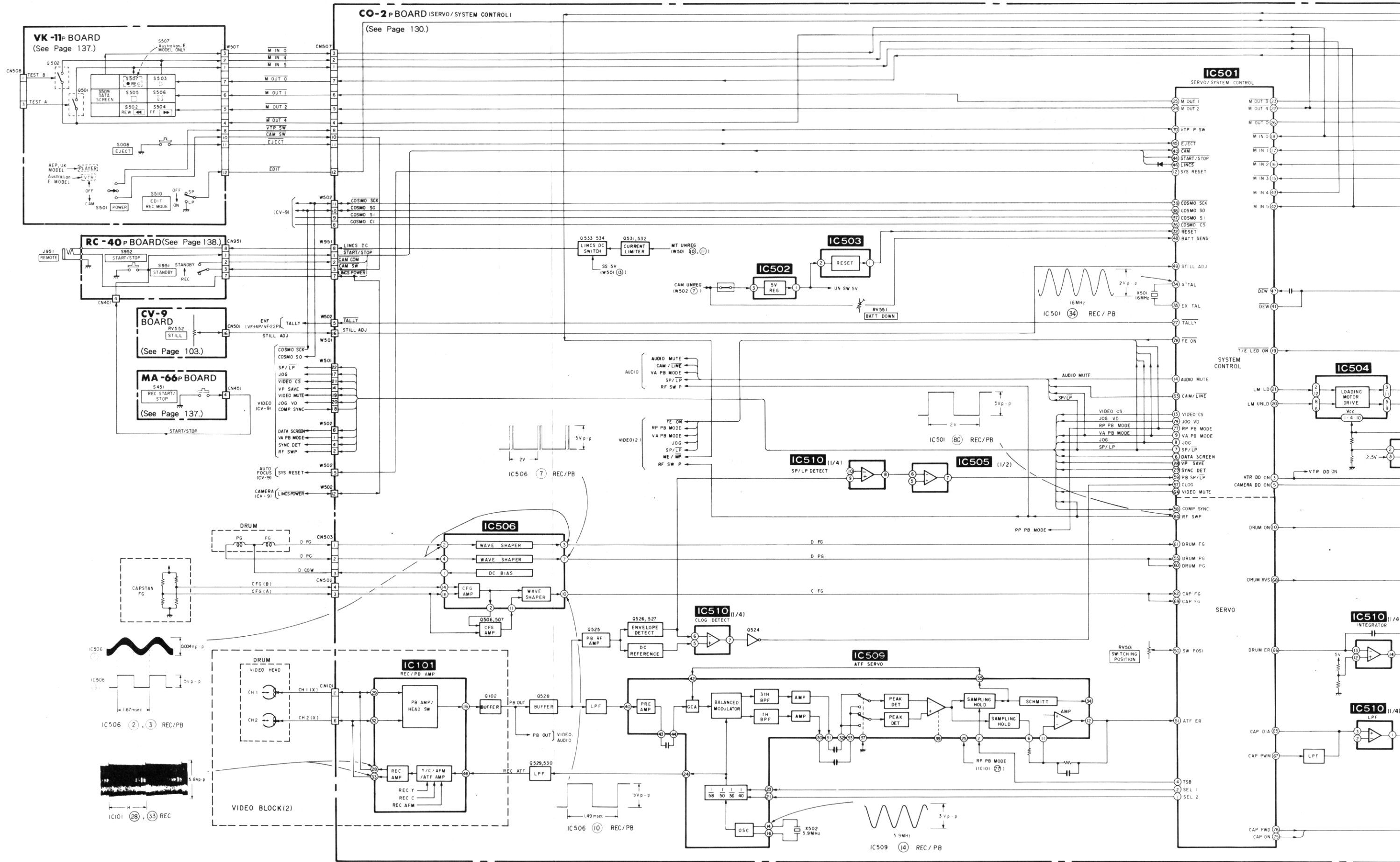


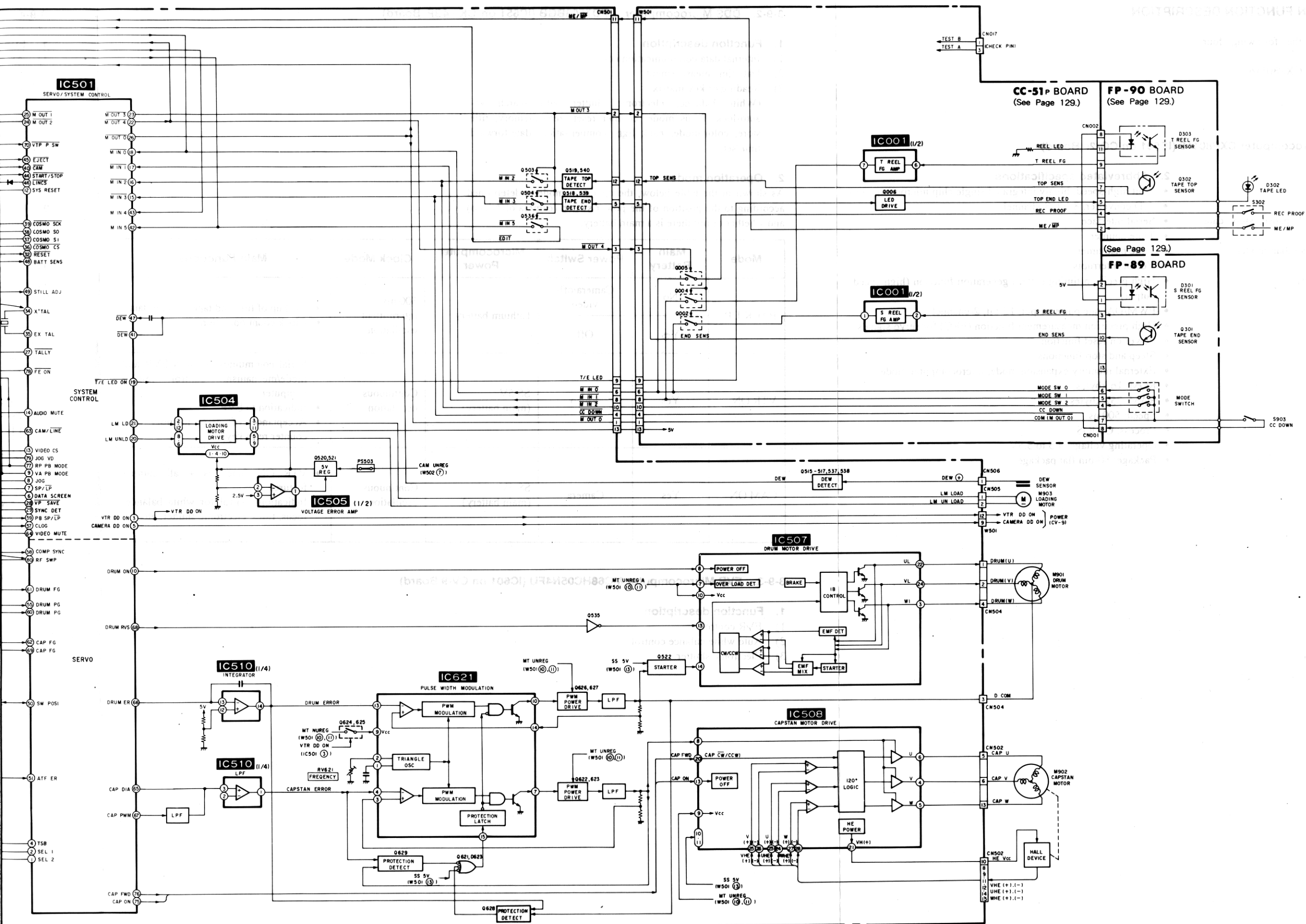
3-7. VIDEO BLOCK DIAGRAM(2)





ERVO, SYSTEM CONTROL BLOCK DIAGRAM





3-9-6. Mode/Mechanism Control — Servo Peripheral Circuit Interface

Signal	I/O	Pin No.	EJECTED	THREAD- ING	UN THREAD- ING	STOP	FF	REW	CUE	REVIEW	PB	PB · PAUSE	REC	REC · PAUSE
SEL 2 *17	O	Pin ① of IC501 on CO-2P board	L	L	L	L	H	H	*3	*3	*2	H	*1	H
SEL 1 *17	O	Pin ② of IC501 on CO-2P board	H	H	H	H	H	H	*3	*3	*2	L	*1	H
TS B *18	O	Pin ④ of IC501 on CO-2P board	L	L	L	L	L	L	*3	*3	*2	*16	*1	L
DRUM ON	O	Pin ⑩ of IC501 on CO-2P board	L	H	H	L	H	H	H	H	H	H	H	H
SW POSI ADJ	I	Pin ⑤ of IC501 on CO-2P board	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
ATF ERROR	I	Pin ⑤ of IC501 on CO-2P board	*6	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
DRUM PG	I	Pins ⑤ and ⑥ of IC501 on CO-2P board	L	*8	*8	L	*8	*8	*8	*8	*8	*8	*8	*8
DRUM FG	I	Pin ⑥ of IC501 on CO-2P board	H	*9	*9	H	*9	*9	*9	*9	*9	*9	*9	*9
CAP FG	I	Pins ⑦ and ⑧ of IC501 on CO-2P board	H/L	PULSE	PULSE	H/L	*10	*10	*10	*10	*10	H/L	*10	H/L
CAP D/A	I	Pin ⑤ of IC501 on CO-2P board	L	*11	*11	L	*11	*11	*11	*11	*11	L	*11	L
DRUM D/A	O	Pin ⑤ of IC501 on CO-2P board	L	*12	*12	L	*12	*12	*12	*12	*12	*12	*12	*12
CAP PWM	O	Pin ⑦ of IC501 on CO-2P board	L	*13	*13	L	*13	*13	*13	*13	*13	L	*13	L
DRUM FWD/REV	O	Pin ⑧ of IC501 on CO-2P board	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14
CAP ON	O	Pin ⑤ of IC501 on CO-2P board	L	H	H	L	H	H	H	H	H	L	H	L
CAP FWD/RVS	O	Pin ⑦ of IC501 on CO-2P board	L	L	H	L	H	L	H	L	H	L	H	L
RF SWP	O	Pin ⑩ of IC501 on CO-2P board	H	*15	*15	H	*15	*15	*15	*15	*15	*15	*15	*15

*1. See timing chart 1.

*2. See timing chart 2.

*3. See timing chart 3.

*4. 1V period "H" pulse

*5. DC voltage set with RV501 (Switching position adjustment)

*6. Approx. 2.3 Vdc constant

*7. ATF error voltage

*8. 2V period "H" pulse

*9. 1.7 msec period pulse

*10. Pulses of frequency in proportion to tape speed

*11. "H" pulse output when rising or falling edges of the capstan, Normally: "HIZ"

*12. 6 msec period PWM signal (tri-state) of "H", "L" and "HIZ" (2.5 Vdc)

*13. 64 μ sec period PWM signal

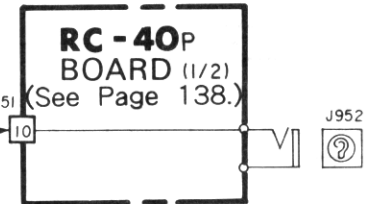
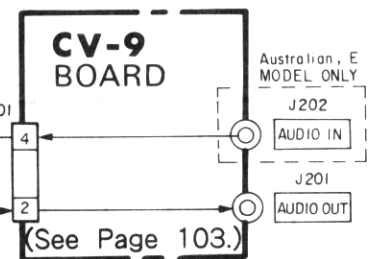
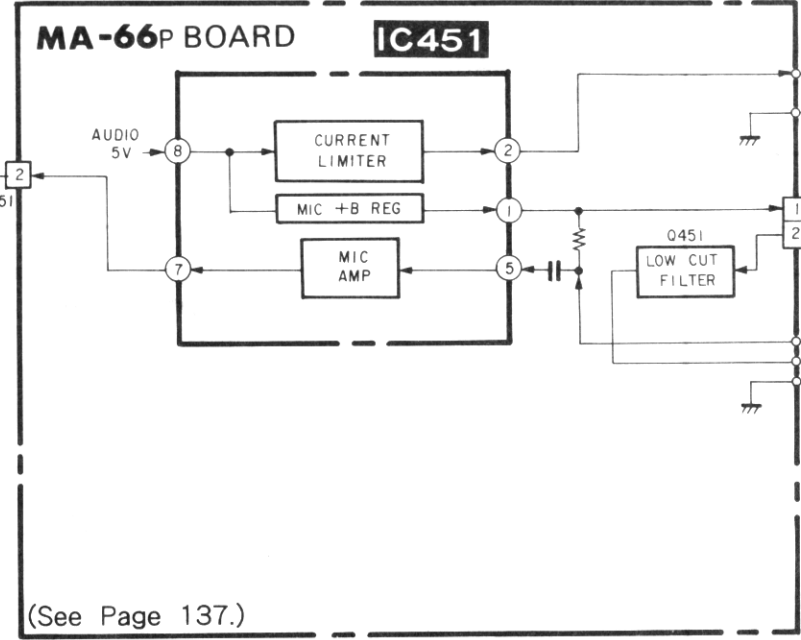
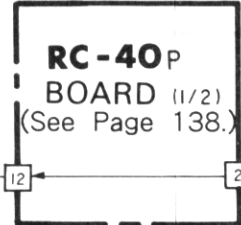
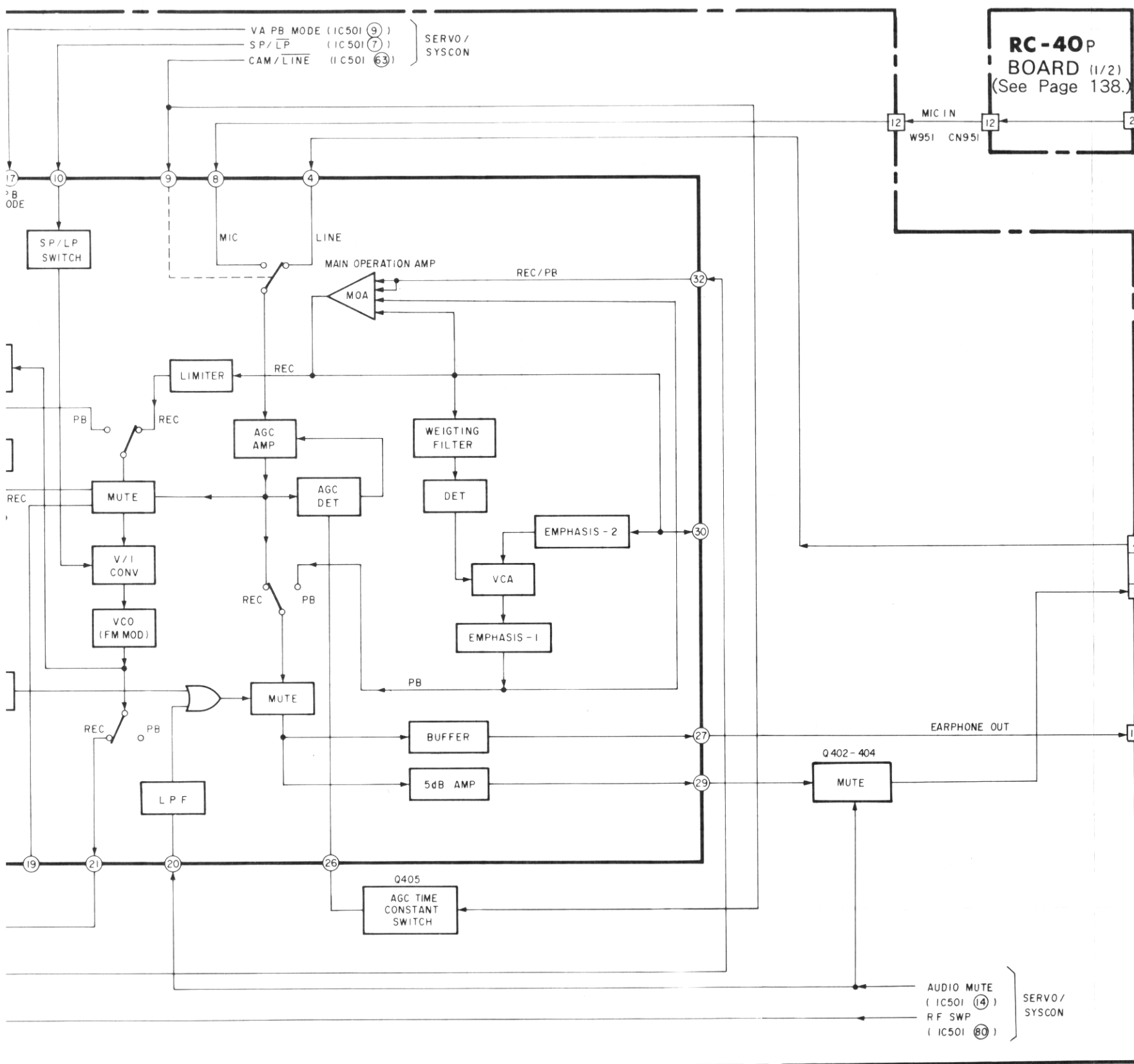
*14. Normally: "H"

*15. 2V period duty 50% pulse

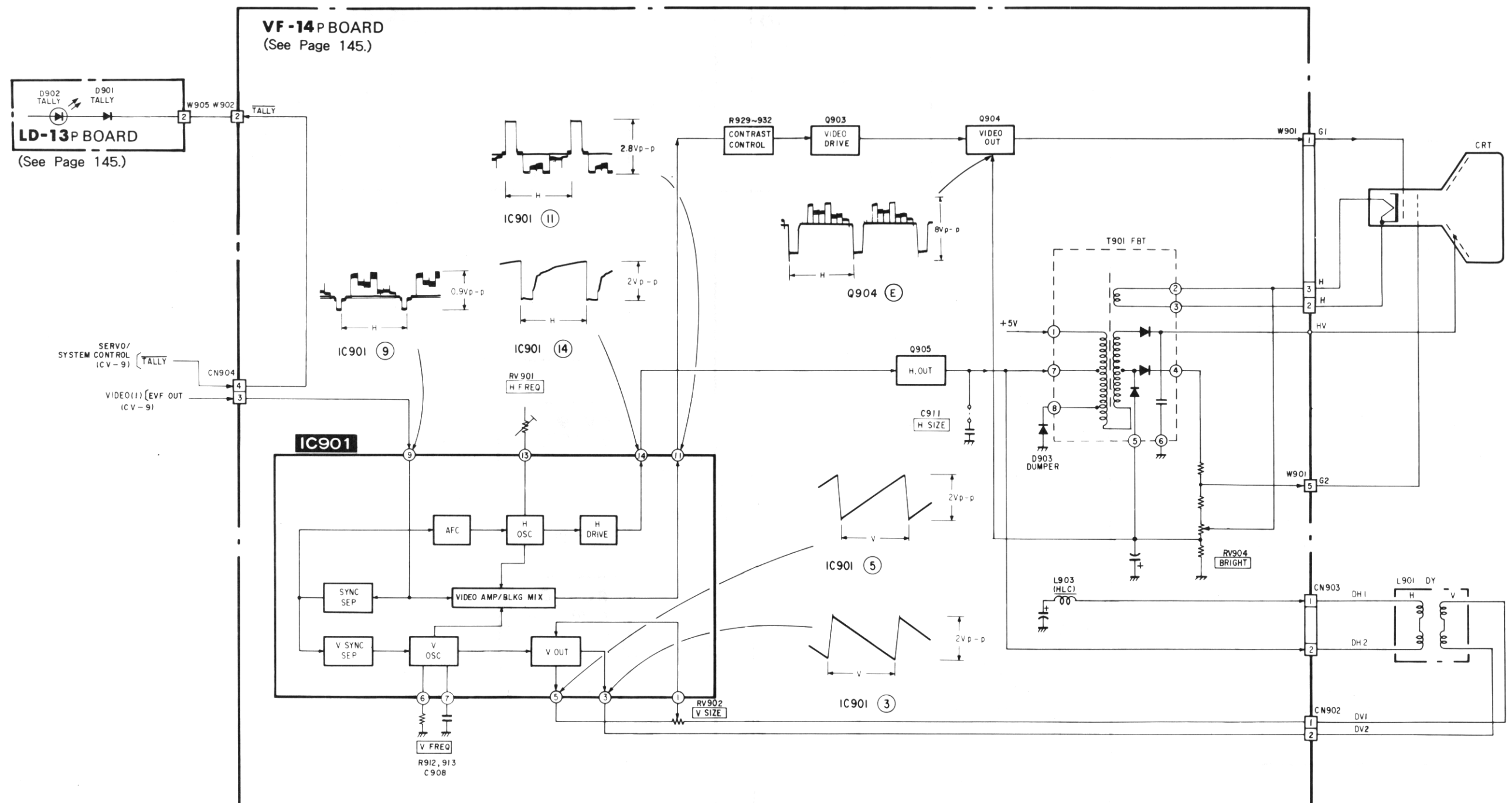
*16. V period "L" pulse

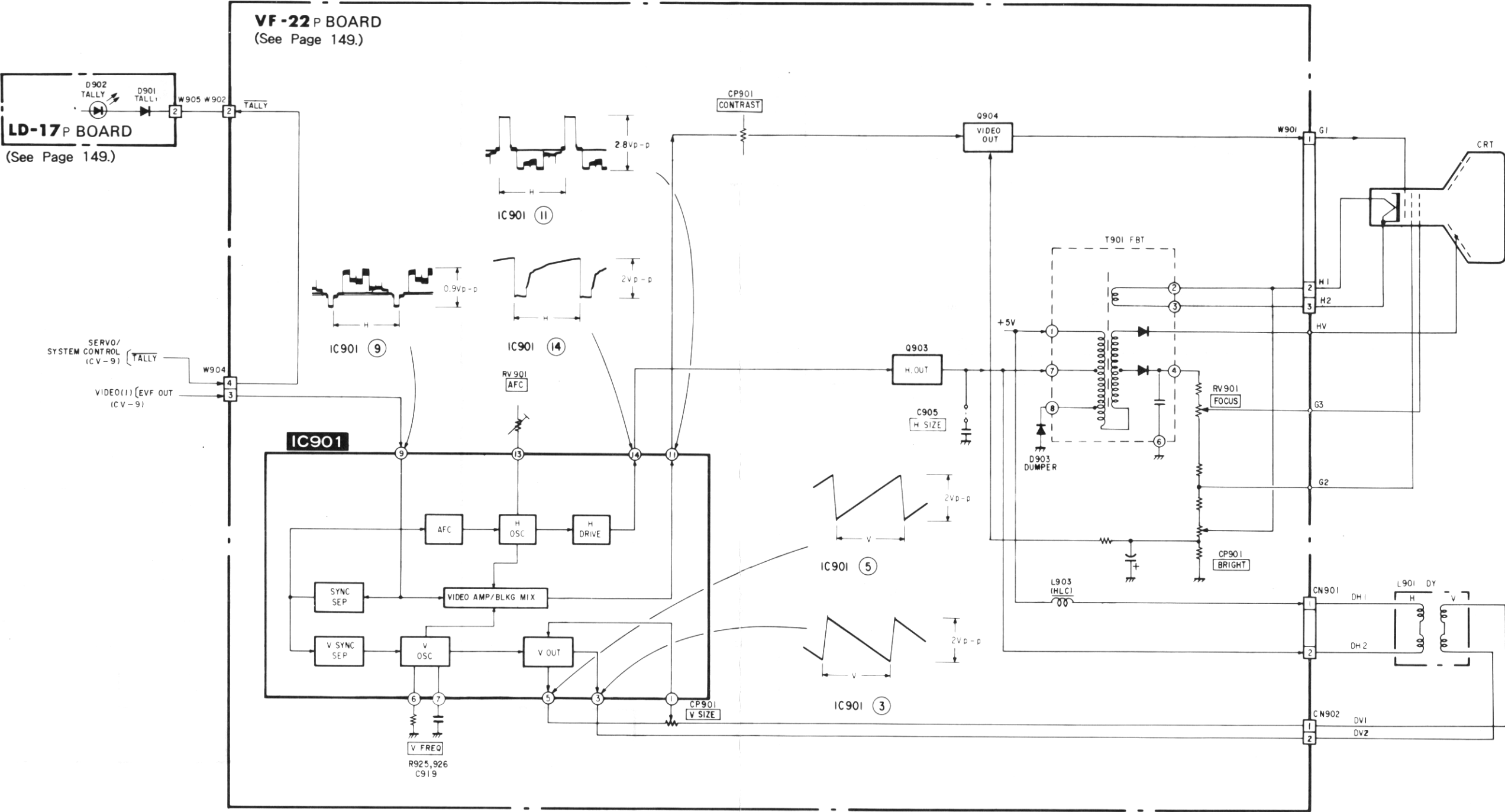
*17. ATF REF PILOT signal frequency (f1 to f4) selecting signal

*18. ATF AGC timing control signal

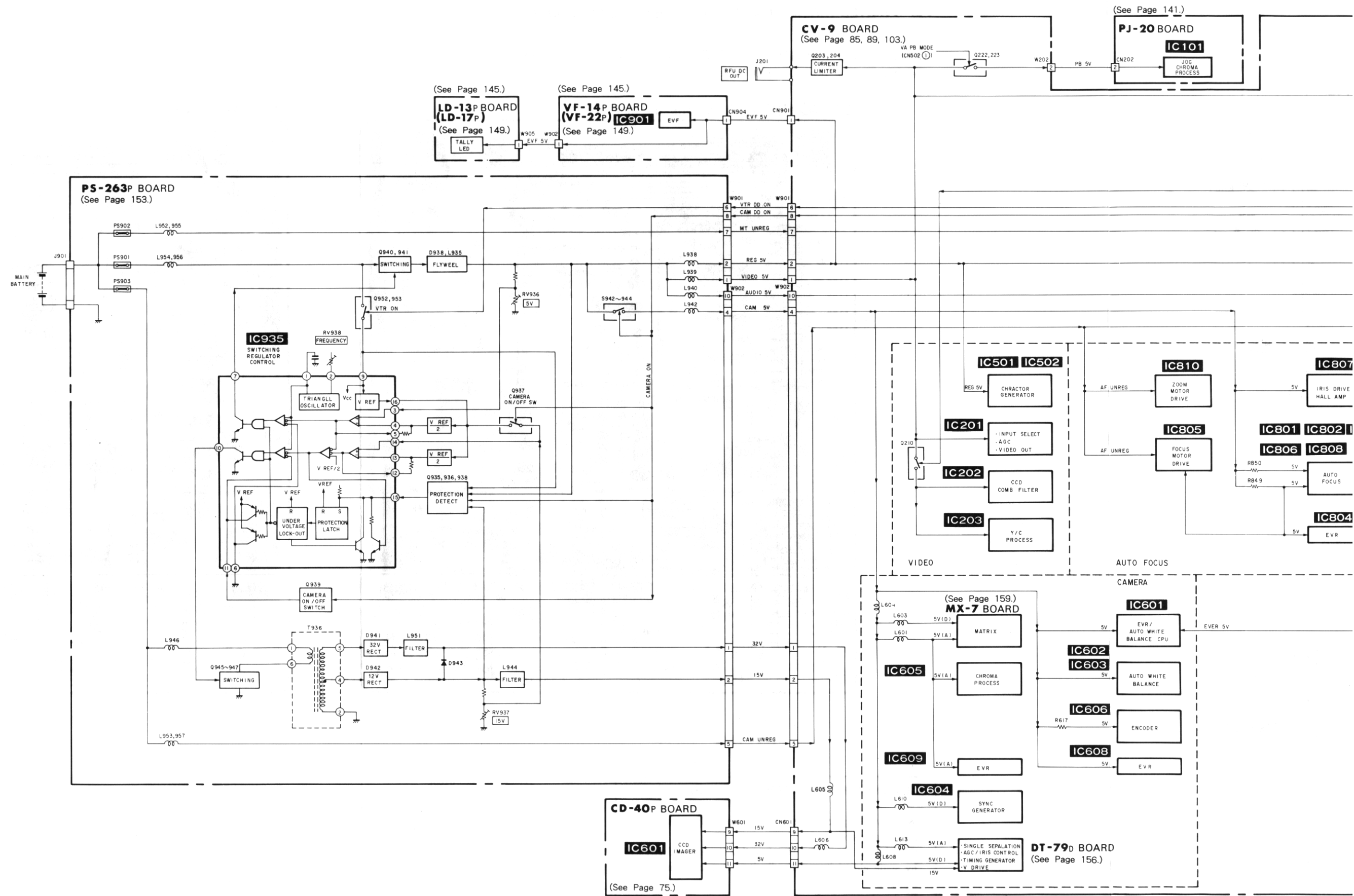


3-11. VIEW FINDER BLOCK DIAGRAM (TYPE A)



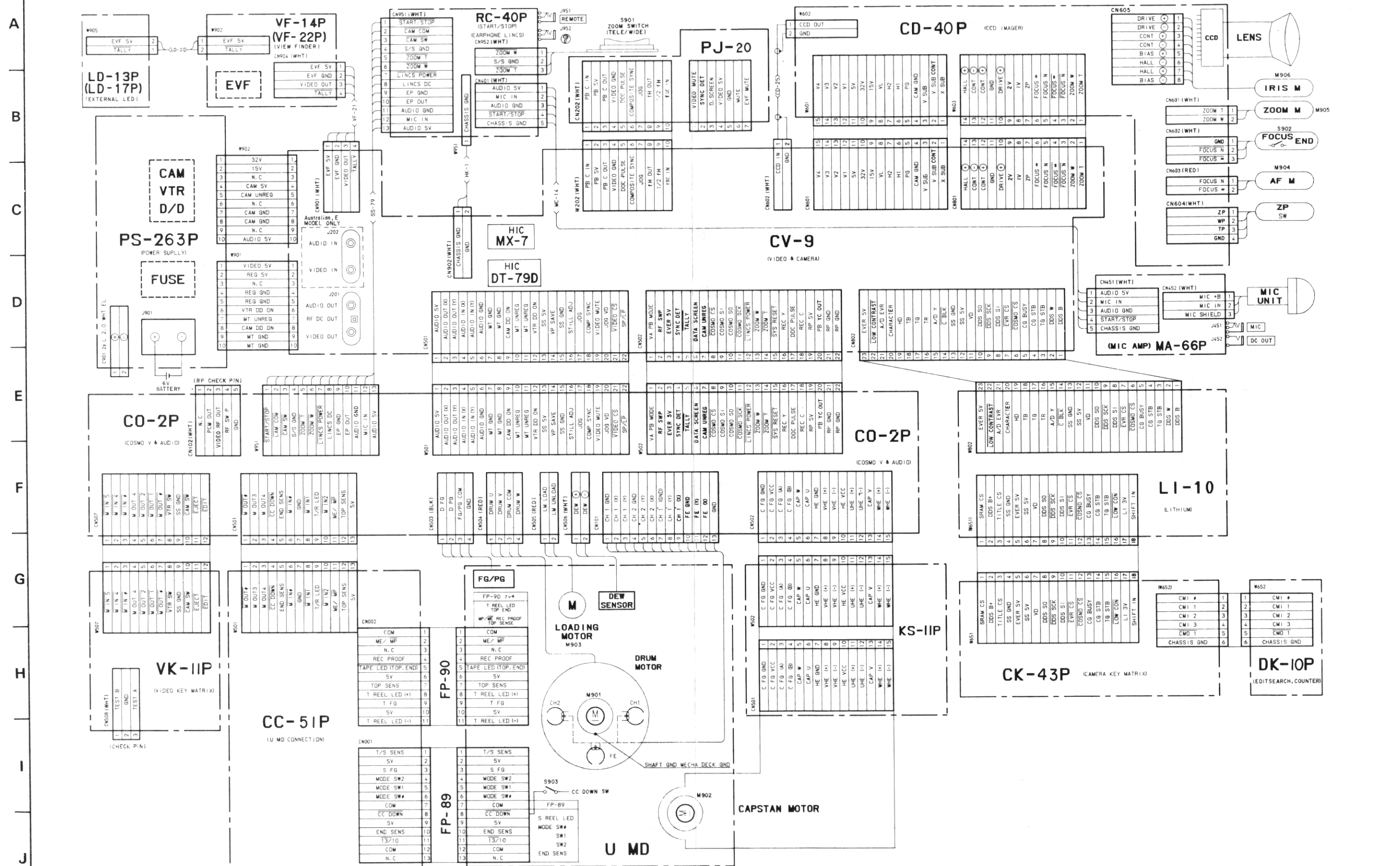


3-13. POWER BLOCK DIAGRAM



SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM

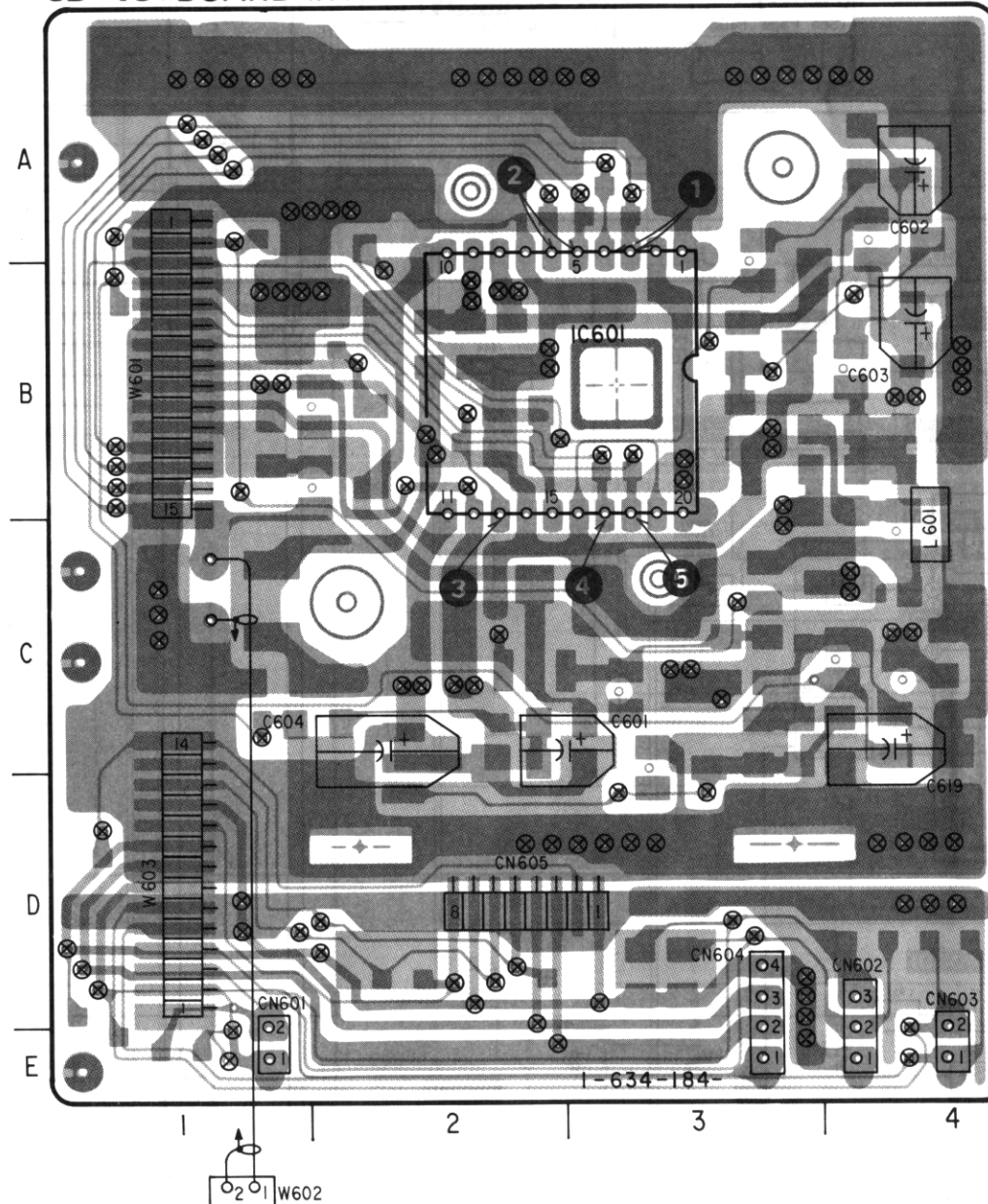


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

CD-40P (CCD IMAGER/ZOOM, FOCUS) PRINTED WIRING BOARDS

- Ref. No. CD-40P BOARD : 1000 series -

CD-40 PBOARD (COMPONENT SIDE)



CAUTIONS FOR REPLACEMENT OF CCD IMAGER

- When you replaced the CCD imager adjust the whole camera assembly.
 - CCD imager has such a structure that it may be destructed by static electricity, so handle it with a care similar for MOS IC.
- Further, be certain that the light receiving part has no stick of dust and no entry of bright light.

DIODE

D601	8-719-104-31	DIODE	MA152WK
D602	8-719-104-34	DIODE	1S2836
D603	8-719-104-31	DIODE	MA152WK
D604	8-719-104-31	DIODE	MA152WK

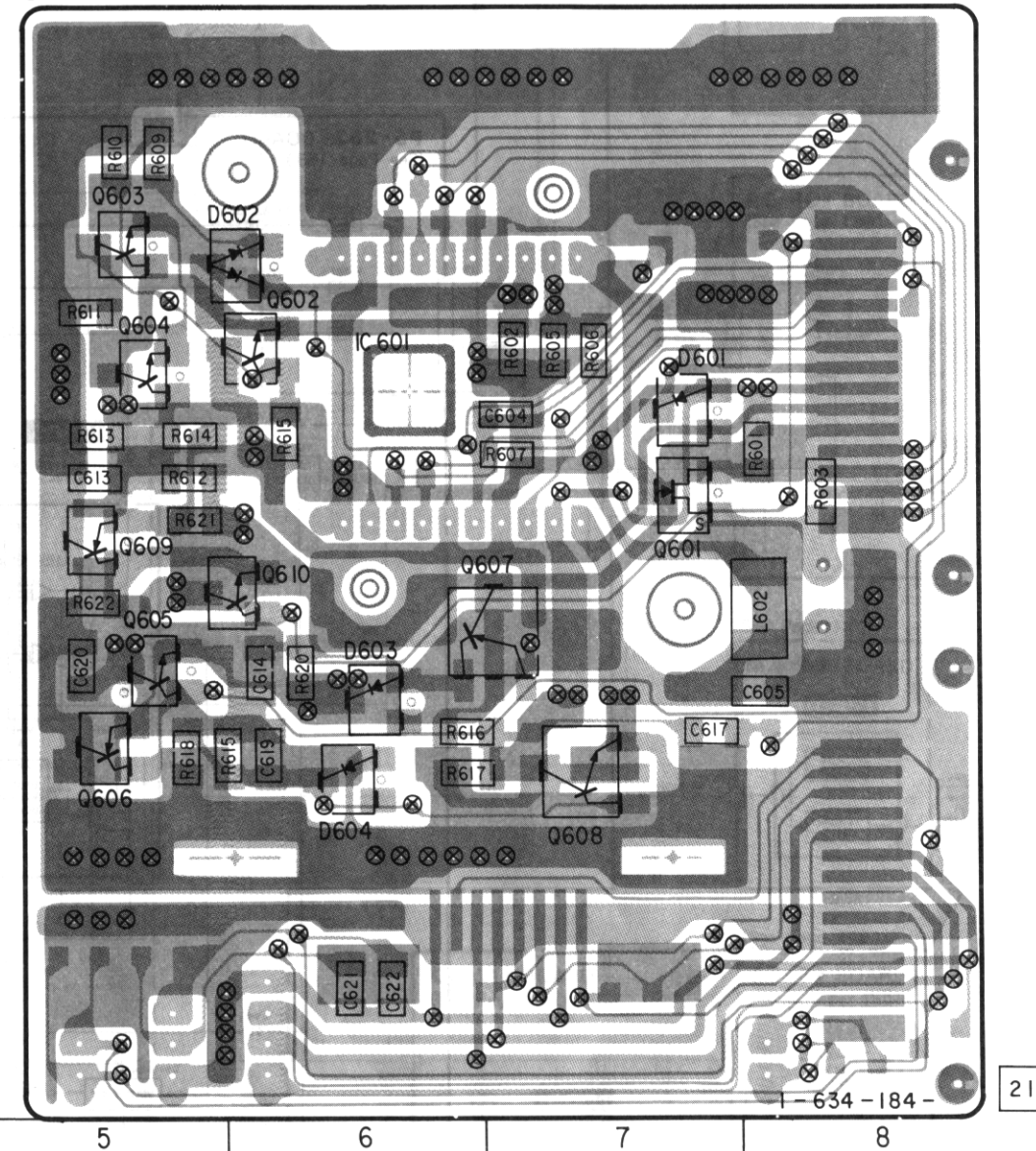
IC

IC601 8-752-604-51 CCD IMAGER ICX045AK-1

TRANSISTOR

Q601	8-765-420-03	TRANSISTOR	2SK300-4
Q602	8-729-100-66	TRANSISTOR	2SC1623
Q603	8-729-100-66	TRANSISTOR	2SC1623
Q604	8-729-100-66	TRANSISTOR	2SC1623
Q605	8-729-100-66	TRANSISTOR	2SC1623
Q606	8-729-216-22	TRANSISTOR	2SA1162
Q607	8-729-104-26	TRANSISTOR	2SB804
Q608	8-729-103-72	TRANSISTOR	2SD1005
Q609	8-729-216-22	TRANSISTOR	2SA1162
Q610	8-729-100-66	TRANSISTOR	2SC1623

CD-40 PBOARD (CONDUCTOR SIDE)



- Ref. No. CD-40P BOARD : 1000 series -

A

B

C

D

E

F

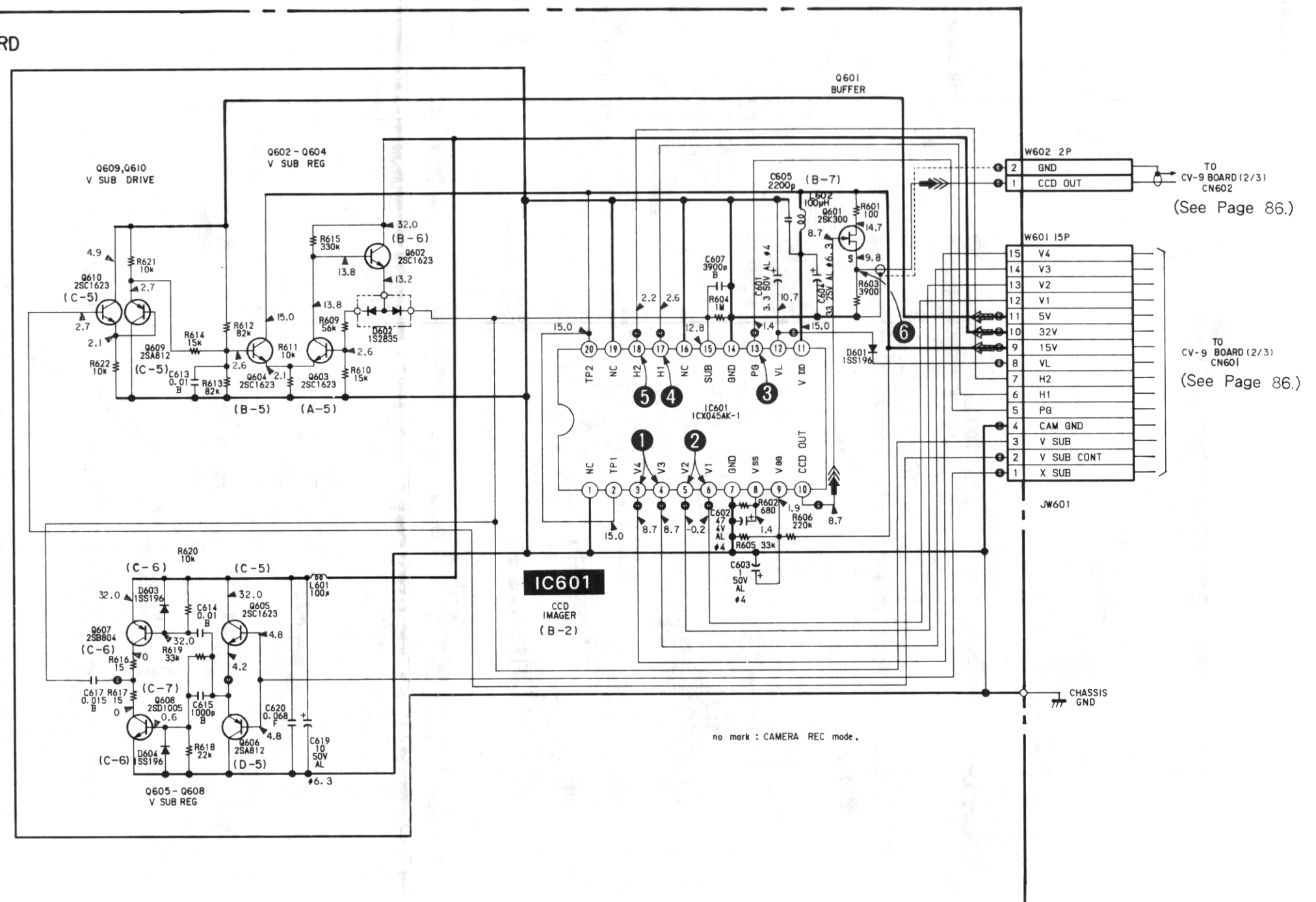
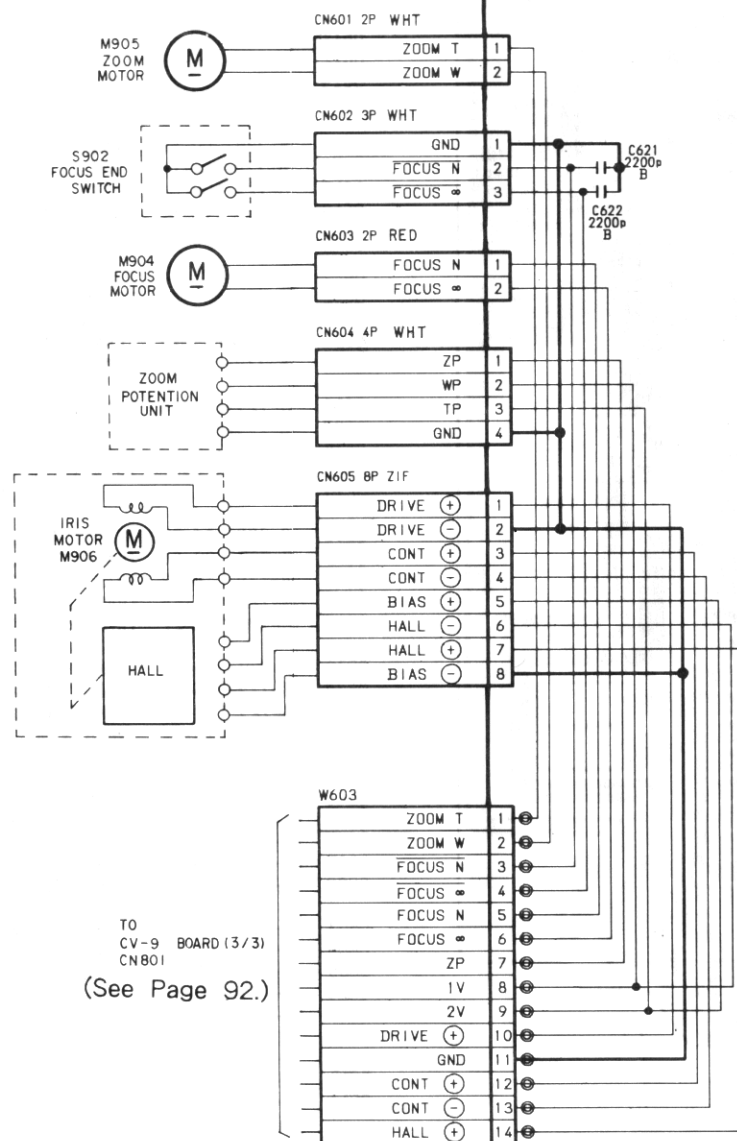
G

H

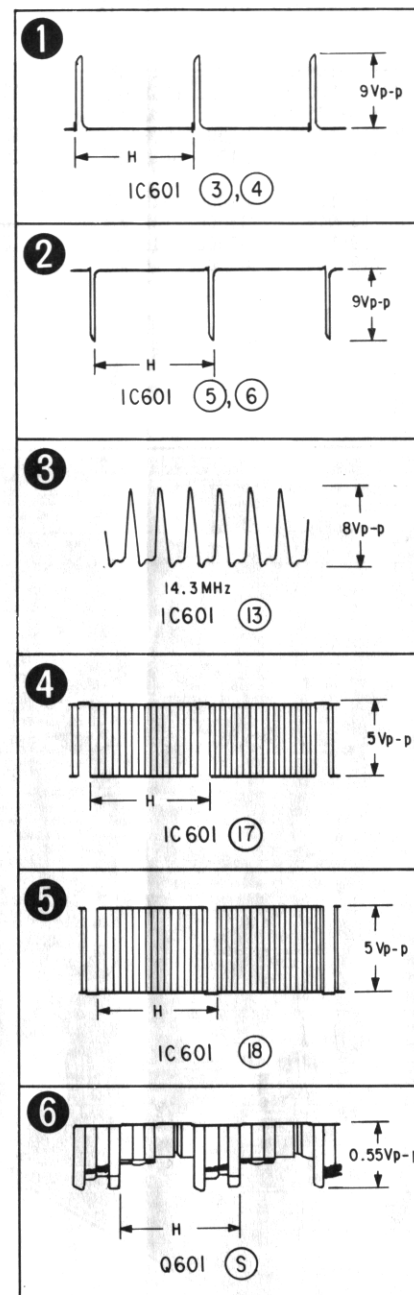
I

J

CD-40P BOARD



CD-40P BOARD



• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC			➡➡➡	
PB				

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

• For printed wiring boards.

- : indicated a lead wire mounted on the component side.
- : indicated a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution:

Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.
(Conductor Side)

Parts face side: Parts on the parts face side seen from the parts face are indicated.
(Component side)

• For schematic diagrams.

- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
Chip resistor are 1/10W unless otherwise noted.
kΩ : 1000Ω, MΩ : 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF.
50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- : adjustment for repair.
- : B+ Line.
- ↔ : IN/OUT direction of (+, -) B LINE.
- Circled numbers refer to waveforms.

Note:

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

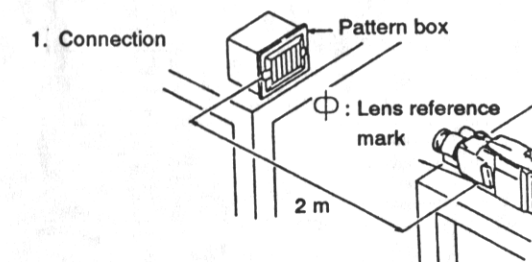
Note:

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

• Measuring conditions voltage value and waveform. (CAMERA, VIEW FINDER block)

- The object is color bar chart of pattern box.
- Voltages are dc between ground and measurement points. Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

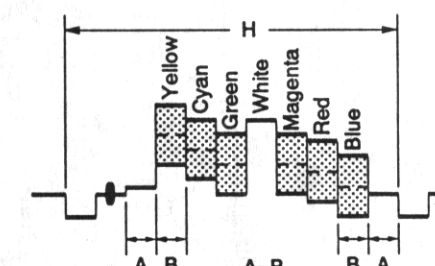


Fig. a (Video output terminal output waveform)

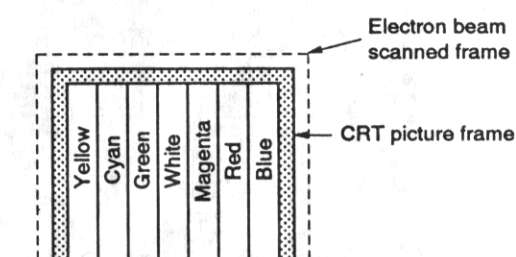


Fig. b (Picture on monitor TV)

(VIDEO, SERVO/SYSTEM CONTROL, VIDEO FUNCTION, VIEW FINDER block)

- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

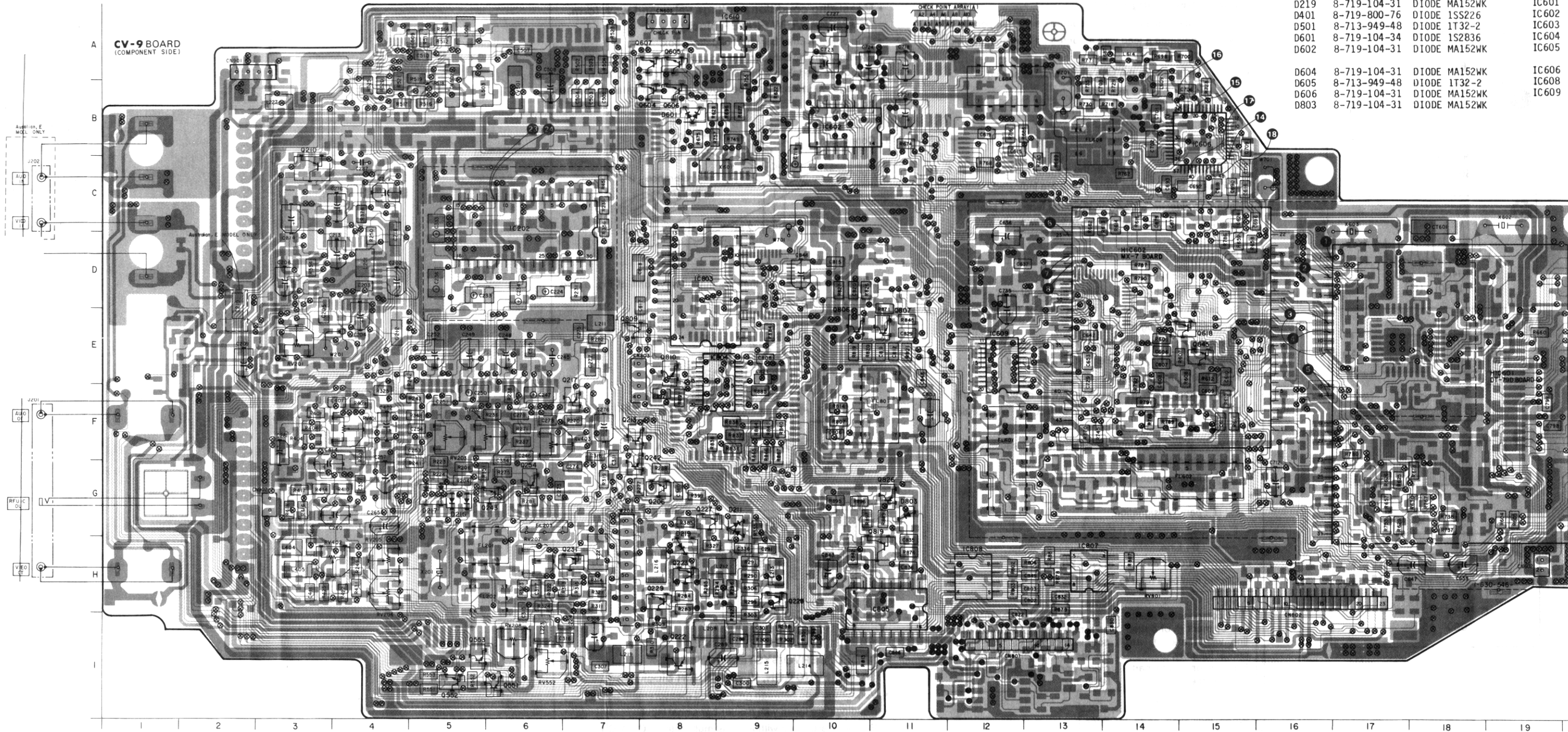
There are not the external input terminal (VIDEO/AUDIO IN) and REC switch in AEP, UK model. Accordingly, perform the following operation for signal input and REC mode.

Signal input : Refer to VIDEO BLOCK ADJUSTMENTS (page 234, Fig. 9-2) for the video signal input method.

REC mode: : Refer to the transition method to REC mode for the model without the external input terminal in the same Fig. 9-2.

CV - 9 (CAMERA, VIDEO PROCESS) PRINTED WIRING BOARDS

— Ref. No CV-9 BOARD: 2000 series —



DIODE			
D211	8-719-800-76	DIODE	1SS226
D213	8-719-104-31	DIODE	MA152WK
D216	8-719-404-13	DIODE	MA159-TX
D217	8-719-404-13	DIODE	MA159-TX
D218	8-719-104-31	DIODE	MA152WK
D219	8-719-104-31	DIODE	MA152WK
D401	8-719-800-76	DIODE	1SS226
D501	8-713-949-48	DIODE	1T32-2
D601	8-719-104-34	DIODE	1S2836
D602	8-719-104-31	DIODE	MA152WK
D604	8-719-104-31	DIODE	MA152WK
D605	8-713-949-48	DIODE	1T32-2
D606	8-719-104-31	DIODE	MA152WK
D803	8-719-104-31	DIODE	MA152WK
IC201		IC	IC201
IC202		IC	IC202
IC203		IC	IC203
IC501		IC	IC501
IC502		IC	IC502
IC601		IC	IC601
IC602		IC	IC602
IC603		IC	IC603
IC604		IC	IC604
IC605		IC	IC605
IC606		IC	IC606
IC608		IC	IC608
IC609		IC	IC609

DIODE

D211	8-719-800-76	DIODE 1SS226
D213	8-719-104-31	DIODE MA152WK
D216	8-719-404-13	DIODE MA159-TX
D217	8-719-404-13	DIODE MA159-TX
D218	8-719-104-31	DIODE MA152WK
D219	8-719-104-31	DIODE MA152WK
D401	8-719-800-76	DIODE 1SS226
D501	8-713-949-48	DIODE 1T32-2
D601	8-719-104-34	DIODE 1S2836
D602	8-719-104-31	DIODE MA152WK
D604	8-719-104-31	DIODE MA152WK
D605	8-713-949-48	DIODE 1T32-2
D606	8-719-104-31	DIODE MA152WK
D803	8-719-104-31	DIODE MA152WK

IC

IC201	8-752-033-40	IC CXA1201Q
IC202	8-752-324-87	IC CXL1502M
IC203	8-752-034-40	IC CXA1200BQ
IC501	8-759-140-26	IC UPD6145G-601
IC502	8-759-970-80	IC MB673198U
IC601	8-759-032-00	IC MC68HC05N4-SC406662
IC602	8-759-932-54	IC BU4066BF
IC603	8-759-100-95	IC UPC324G2
IC604	8-752-326-08	IC CXD1159Q
IC605	8-752-034-21	IC CXA1339R
IC606	8-752-033-34	IC CXA1072R
IC608	8-759-946-00	IC MB88341PFV
IC609	8-759-946-00	IC MB88341PFV
IC610	8-759-937-56	IC S-8054ALB-LM-S
IC801	8-752-326-18	IC CXD1204R
IC802	8-759-037-22	IC MC68HC05C4-SC411533
IC803	8-759-971-93	IC MSM62196S
IC804	8-759-946-00	IC MB88341PFV
IC805	8-759-030-35	IC MPC1725MR
IC806	8-759-979-41	IC LM358PS
IC807	8-759-981-82	IC RC3414M
IC808	8-759-979-41	IC LM358PS
IC810	8-759-500-11	IC MM1036XF

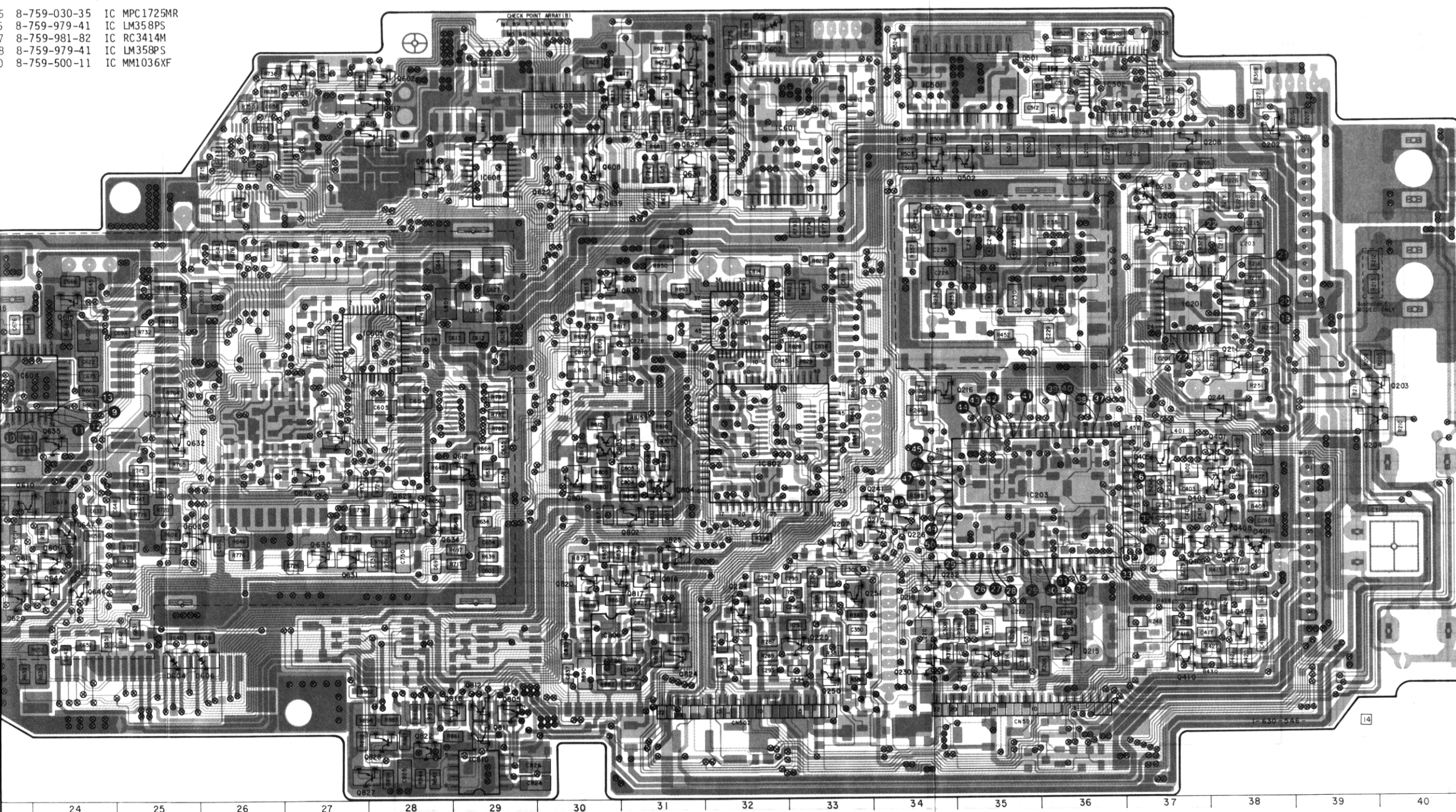
CV-9 BOARD (CONDUCTOR SIDE)

TRANSISTOR

Q202	8-729-100-66	TRANSISTOR
Q203	8-729-100-66	TRANSISTOR
Q204	8-729-101-07	TRANSISTOR
Q206	8-729-901-01	TRANSISTOR
Q207	8-729-901-01	TRANSISTOR
Q208	8-729-901-01	TRANSISTOR
Q209	8-729-216-22	TRANSISTOR
Q210	8-729-101-07	TRANSISTOR
Q211	8-729-901-01	TRANSISTOR
Q212	8-729-901-01	TRANSISTOR

8-759-937-56 IC S-8054ALB-LM-S
 8-752-326-18 IC CXD1204R
 8-759-037-22 IC MC68HC05C4-SC411533
 8-759-971-93 IC MSM6219GS
 8-759-946-00 IC MB88341PFV

8-759-030-35 IC MPC1725MR
 8-759-979-41 IC LM358PS
 8-759-981-82 IC RC3414M
 8-759-979-41 IC LM358PS
 8-759-500-11 IC MM1036XF



24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

TRANSISTOR							
Q202	8-729-100-66	TRANSISTOR	2SC1623	Q213	8-729-100-66	TRANSISTOR	2SC1623
Q203	8-729-100-66	TRANSISTOR	2SC1623	Q215	8-729-100-66	TRANSISTOR	2SC1623
Q204	8-729-101-07	TRANSISTOR	2SB798-DL	Q216	8-729-100-66	TRANSISTOR	2SC1623
Q206	8-729-901-01	TRANSISTOR	DTC144EK	Q217	8-729-216-22	TRANSISTOR	2SA1162
Q207	8-729-901-01	TRANSISTOR	DTA144EK	Q222	8-729-101-07	TRANSISTOR	2SB798-DL
Q208	8-729-901-01	TRANSISTOR	DTC144EK	Q223	8-729-901-01	TRANSISTOR	DTC144EK
Q209	8-729-216-22	TRANSISTOR	2SA1162	Q224	8-729-102-07	TRANSISTOR	2SC2223-F13
Q210	8-729-101-07	TRANSISTOR	2SB798-DL	Q225	8-729-100-66	TRANSISTOR	2SC1623
Q211	8-729-901-01	TRANSISTOR	DTC144EK	Q226	8-729-901-06	TRANSISTOR	DTA144EK
Q212	8-729-901-01	TRANSISTOR	DTC144EK	Q227	8-729-805-41	TRANSISTOR	2SC3398
Q228	8-729-100-66	TRANSISTOR	2SC1623	Q233	8-729-216-22	TRANSISTOR	2SA1162
Q229	8-729-216-22	TRANSISTOR	2SA1162	Q241	8-729-901-06	TRANSISTOR	DTA144EK
Q230	8-729-122-63	TRANSISTOR	2SA1226	Q242	8-729-901-01	TRANSISTOR	DTC144EK
Q231	8-729-102-07	TRANSISTOR	2SC2223-F13	Q243	8-729-100-66	TRANSISTOR	2SC1623
Q232	8-729-102-07	TRANSISTOR	2SC2223-F13	Q244	8-729-901-01	TRANSISTOR	DTC144EK
Q250	8-729-100-66	TRANSISTOR	2SC1623	Q405	8-729-100-66	TRANSISTOR	2SC1623
Q251	8-729-216-22	TRANSISTOR	2SA1162	Q406	8-729-100-66	TRANSISTOR	2SC1623
Q254	8-729-100-66	TRANSISTOR	2SC1623	Q407	8-729-100-66	TRANSISTOR	2SC1623
Q401	8-729-402-84	TRANSISTOR	2N4601	Q408	8-729-216-22	TRANSISTOR	2SA1162
Q403	8-729-421-23	TRANSISTOR	2N1216	Q409	8-729-102-07	TRANSISTOR	2SC2223-F13

Q410 8-729-216-22 TRANSISTOR 2SA1162
 Q501 8-729-100-66 TRANSISTOR 2SC1623
 Q502 8-729-100-66 TRANSISTOR 2SC1623
 Q551 8-729-901-06 TRANSISTOR DTA144EK

Q552 8-729-902-XX TRANSISTOR DTC114TK
 Q553 8-729-902-XX TRANSISTOR DTC114TK
 Q602 8-729-100-66 TRANSISTOR 2SC1623
 Q603 8-729-216-22 TRANSISTOR 2SA1162
 Q604 8-729-805-42 TRANSISTOR 2SC3859

Q605 8-729-901-01 TRANSISTOR DTC144EK
 Q606 8-729-901-01 TRANSISTOR DTC144EK
 Q607 8-729-805-42 TRANSISTOR 2SC3859
 Q608 8-729-100-66 TRANSISTOR 2SC1623
 Q609 8-729-100-66 TRANSISTOR 2SC1623

Q610 8-729-216-22 TRANSISTOR 2SA1162
 Q611 8-729-100-66 TRANSISTOR 2SC1623
 Q612 8-729-216-22 TRANSISTOR 2SA1162
 Q614 8-729-216-22 TRANSISTOR 2SA1162
 Q615 8-729-100-66 TRANSISTOR 2SC1623

Q616 8-729-100-66 TRANSISTOR 2SC1623
 Q617 8-729-100-66 TRANSISTOR 2SC1623
 Q618 8-729-100-66 TRANSISTOR 2SC1623
 Q619 8-729-100-66 TRANSISTOR 2SC1623
 Q620 8-729-100-66 TRANSISTOR 2SC1623

Q621 8-729-805-42 TRANSISTOR 2SC3859
 Q622 8-729-805-42 TRANSISTOR 2SC3859
 Q623 8-729-805-42 TRANSISTOR 2SC3859
 Q624 8-729-805-42 TRANSISTOR 2SC3859
 Q625 8-729-216-22 TRANSISTOR 2SA1162

Q626 8-729-100-66 TRANSISTOR 2SC1623
 Q627 8-729-216-22 TRANSISTOR 2SA1162
 Q628 8-729-216-22 TRANSISTOR 2SA1162
 Q629 8-729-920-08 TRANSISTOR DTC124TK
 Q630 8-729-216-22 TRANSISTOR 2SA1162

Q631 8-729-216-22 TRANSISTOR 2SA1162
 Q632 8-729-100-66 TRANSISTOR 2SC1623
 Q633 8-729-216-22 TRANSISTOR 2SA1162
 Q634 8-729-100-66 TRANSISTOR 2SC1623
 Q635 8-729-216-22 TRANSISTOR 2SA1162

Q638 8-729-216-22 TRANSISTOR 2SA1162
 Q639 8-729-805-42 TRANSISTOR 2SC3859
 Q641 8-729-100-66 TRANSISTOR 2SC1623
 Q642 8-729-216-22 TRANSISTOR 2SA1162
 Q644 8-729-216-22 TRANSISTOR 2SA1162

Q645 8-729-100-66 TRANSISTOR 2SC1623
 Q646 8-729-216-22 TRANSISTOR 2SA1162
 Q647 8-729-100-66 TRANSISTOR 2SC1623
 Q648 8-729-216-22 TRANSISTOR 2SA1162
 Q802 8-729-100-66 TRANSISTOR 2SC1623

Q803 8-729-402-19 TRANSISTOR 2N6501
 Q804 8-729-402-19 TRANSISTOR 2N6501
 Q805 8-729-901-01 TRANSISTOR DTC144EK
 Q806 8-729-100-66 TRANSISTOR 2SC1623
 Q807 8-729-100-66 TRANSISTOR 2SC1623

Q809 8-729-805-42 TRANSISTOR 2SC3859
 Q810 8-729-805-42 TRANSISTOR 2SC3859
 Q811 8-729-901-06 TRANSISTOR DTA144EK

Q812 8-729-901-06 TRANSISTOR DTA144EK
 Q816 8-729-100-66 TRANSISTOR 2SC1623
 Q817 8-729-216-22 TRANSISTOR 2SA1162
 Q818 8-729-100-66 TRANSISTOR 2SC1623
 Q819 8-729-119-76 TRANSISTOR 2SB1175-HFE

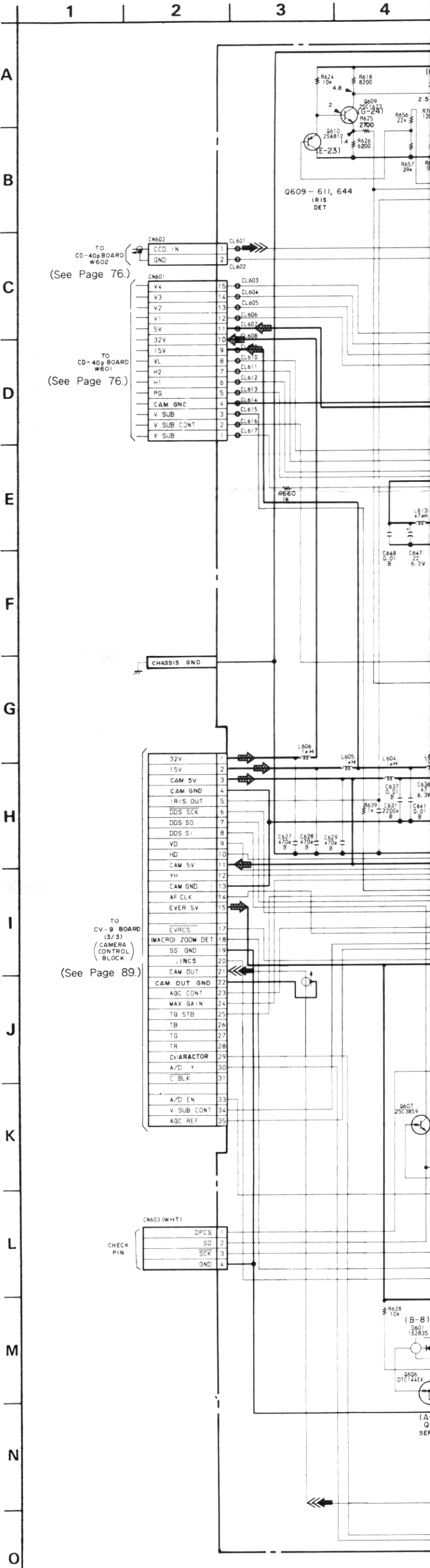
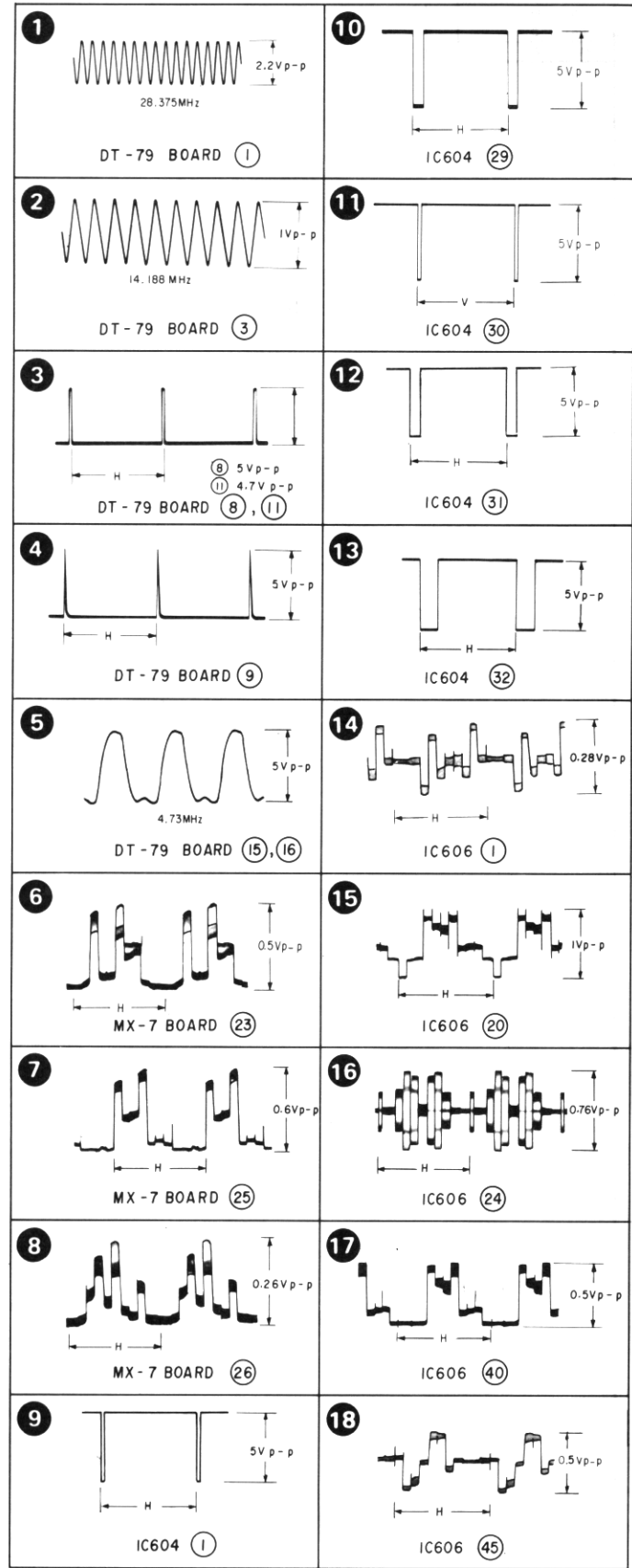
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 Q822 8-729-216-22 TRANSISTOR 2SA1162
 Q824 8-729-901-01 TRANSISTOR DTC144EK
 Q825 8-729-901-01 TRANSISTOR DTC144EK
 Q826 8-729-216-22 TRANSISTOR 2SA1162

Q827 8-729-100-66 TRANSISTOR 2SC1623
 Q828 8-729-216-22 TRANSISTOR 2SA1162
 Q830 8-729-805-42 TRANSISTOR 2SC3859

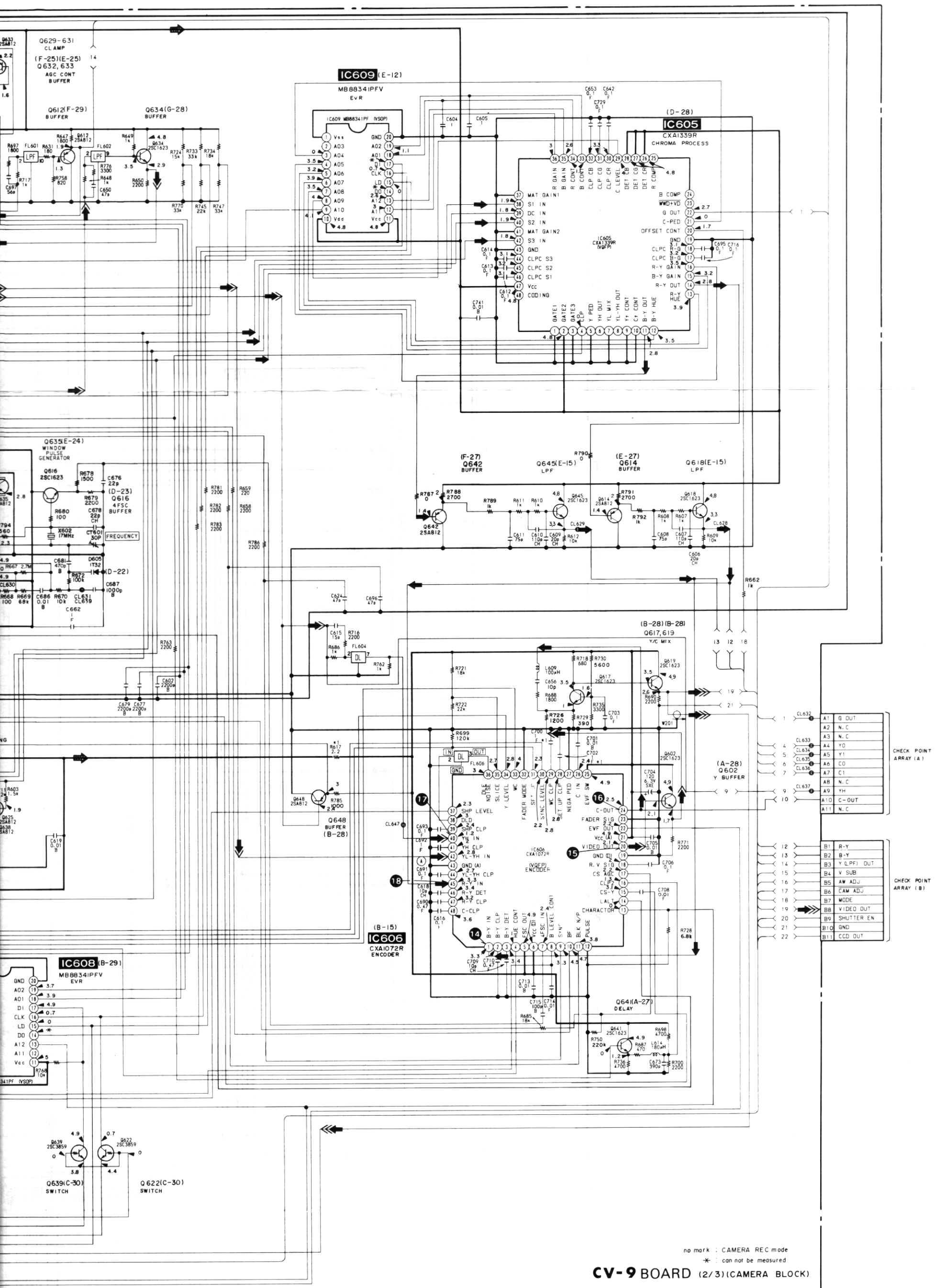
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡➡	➡➡➡	
PB				

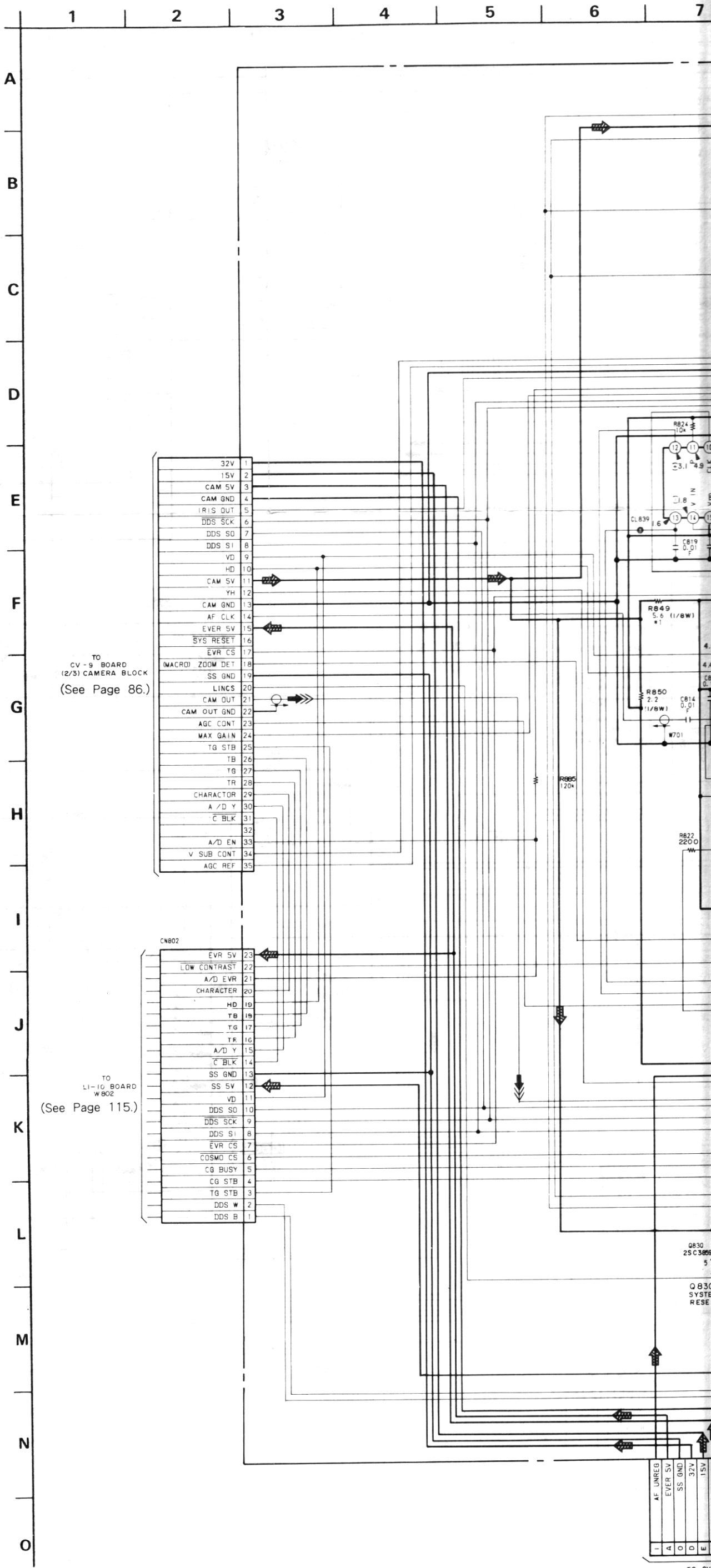
CV-9 BOARD (CAMERA)

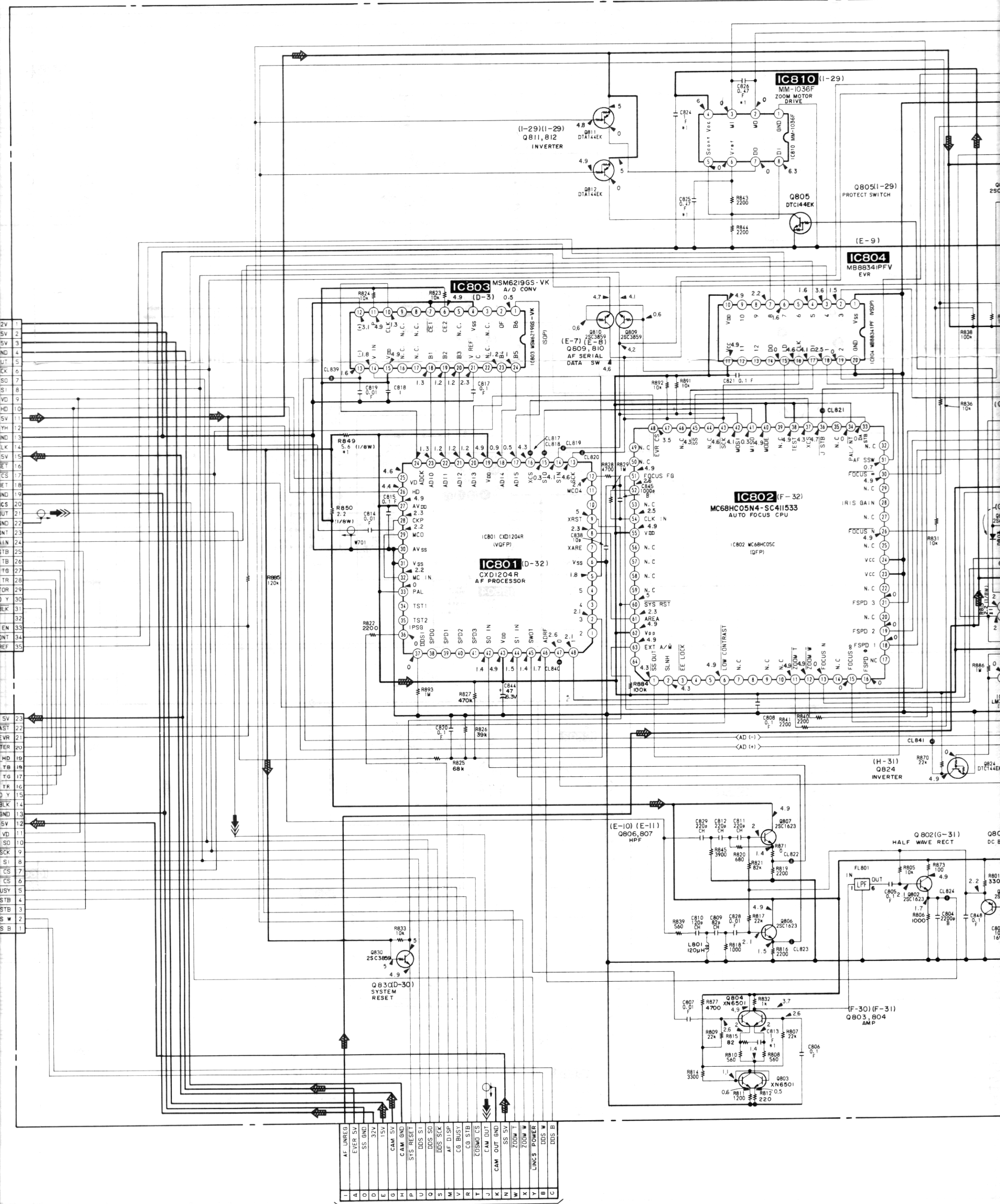


10. CV-9 BOARD: 2000 series —

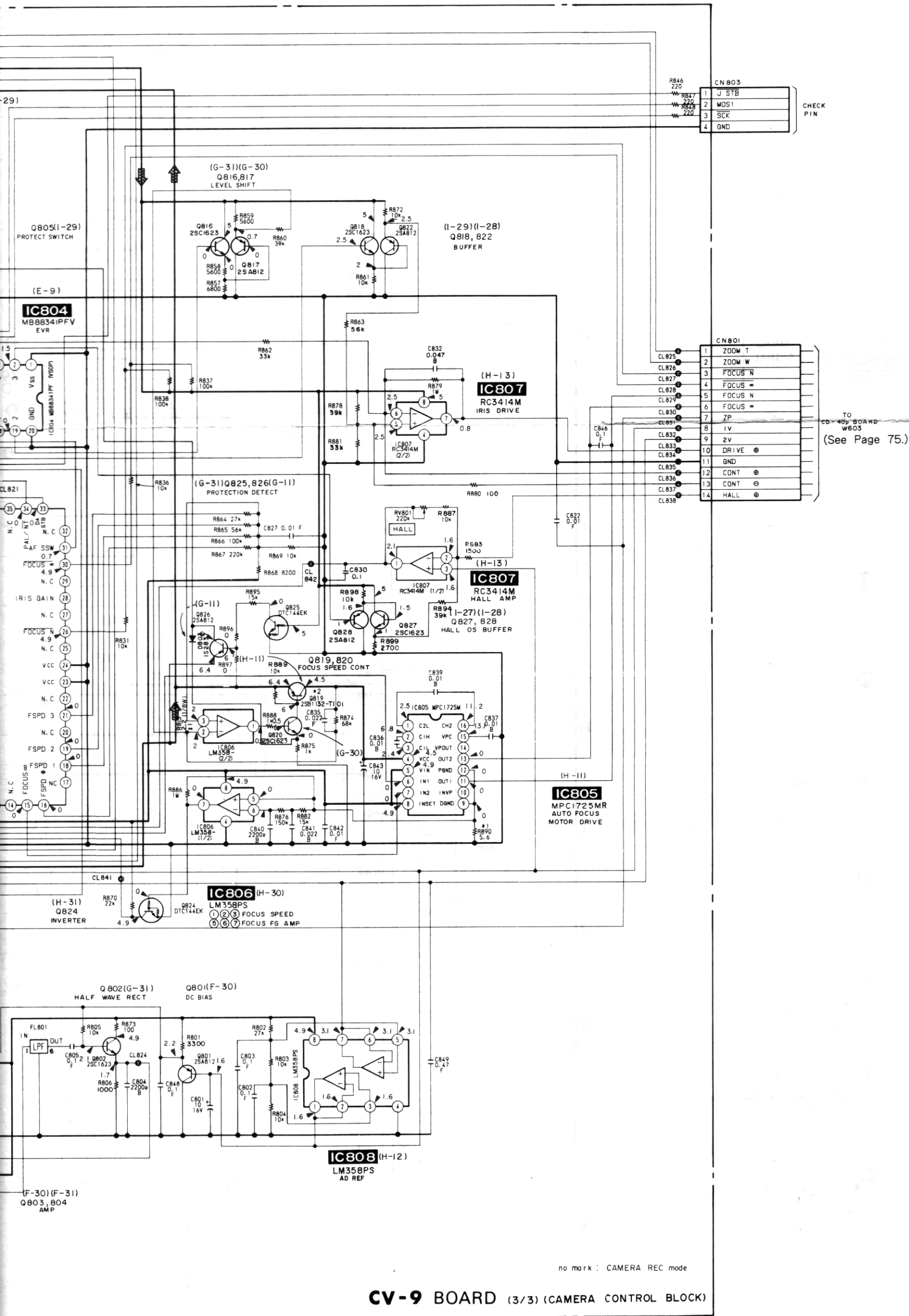


— Ref. No. CV-9BOARD: 2000 series —





TO CV-9 BOARD (1/3) VIDEO BLOCK
(See Page 104.)



• SIGNAL PATH

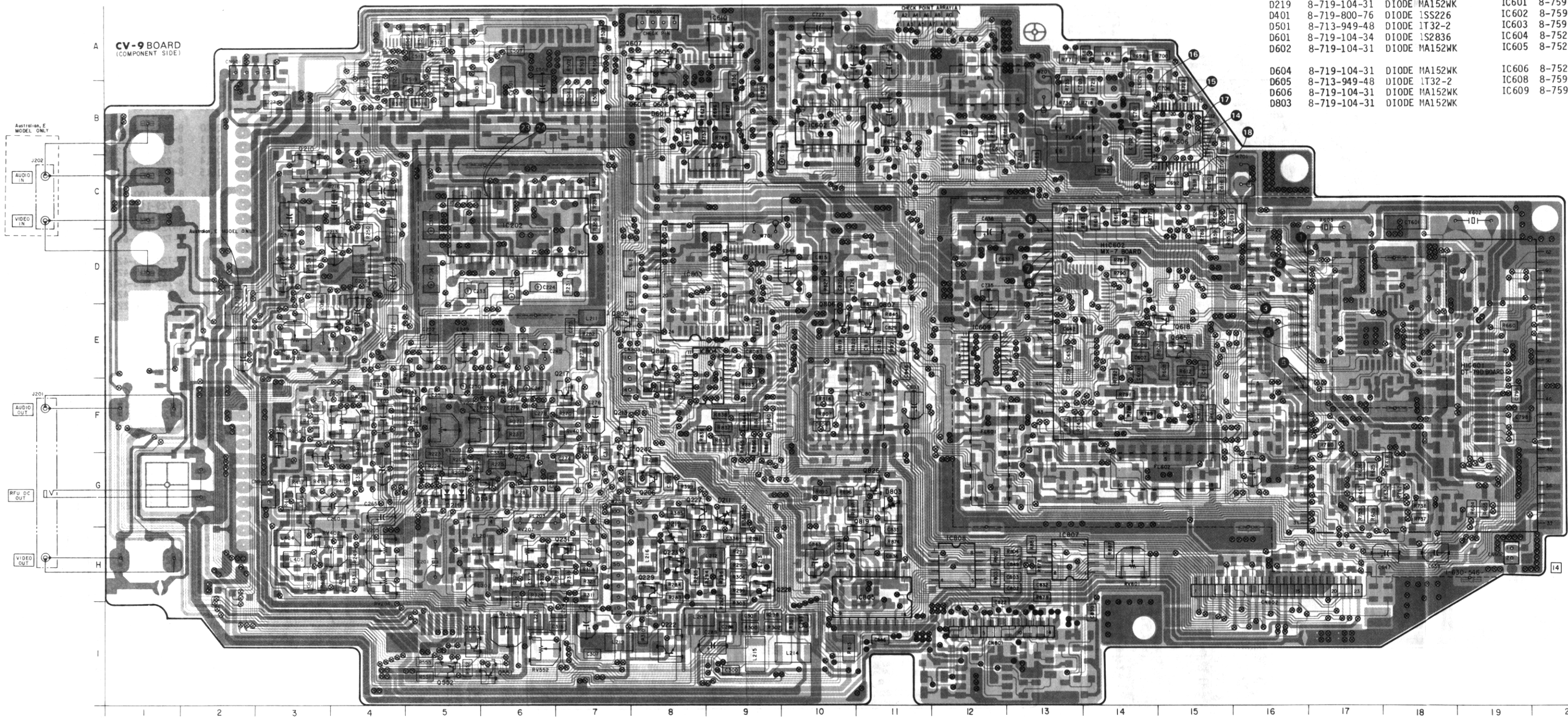
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC			➡➡➡	
PB				

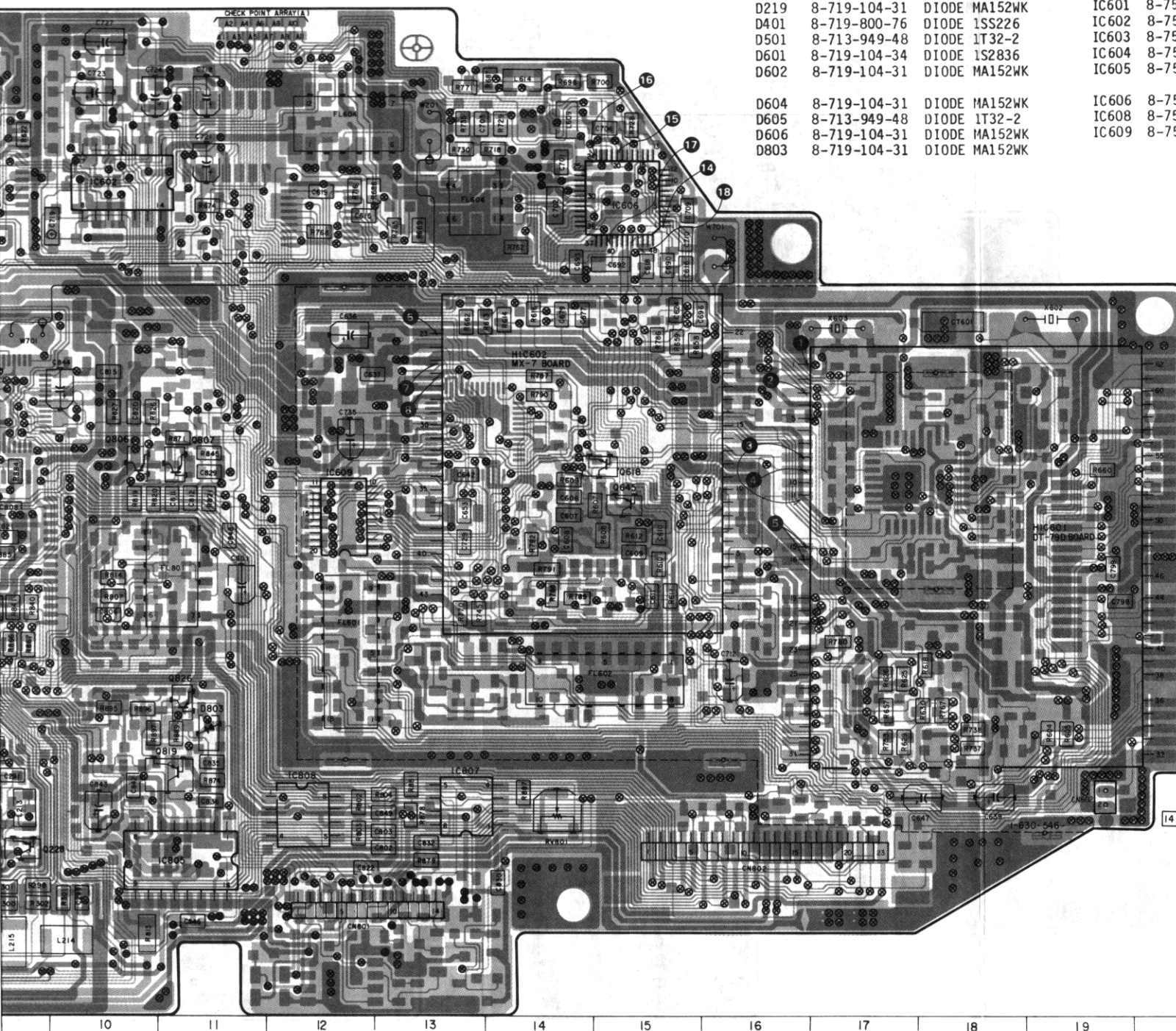
CV-9 (CAMERA, VIDEO PROCESS) PRINTED WIRING BOARDS

— Ref. No. CV-9BOARD: 2000 series —

DIODE

D211	8-719-800-76	DIODE 1SS226	IC201	8-752-03
D213	8-719-104-31	DIODE MA152WK	IC202	8-752-32
D216	8-719-404-13	DIODE MA159-TX	IC203	8-752-03
D217	8-719-404-13	DIODE MA159-TX	IC501	8-759-14
D218	8-719-104-31	DIODE MA152WK	IC502	8-759-97
D219	8-719-104-31	DIODE MA152WK	IC601	8-759-03
D401	8-719-800-76	DIODE 1SS226	IC602	8-759-93
D501	8-713-949-48	DIODE 1T32-2	IC603	8-759-10
D601	8-719-104-34	DIODE 1S2836	IC604	8-752-32
D602	8-719-104-31	DIODE MA152WK	IC605	8-752-03
D604	8-719-104-31	DIODE MA152WK	IC606	8-752-03
D605	8-713-949-48	DIODE 1T32-2	IC608	8-759-94
D606	8-719-104-31	DIODE MA152WK	IC609	8-759-94
D803	8-719-104-31	DIODE MA152WK		





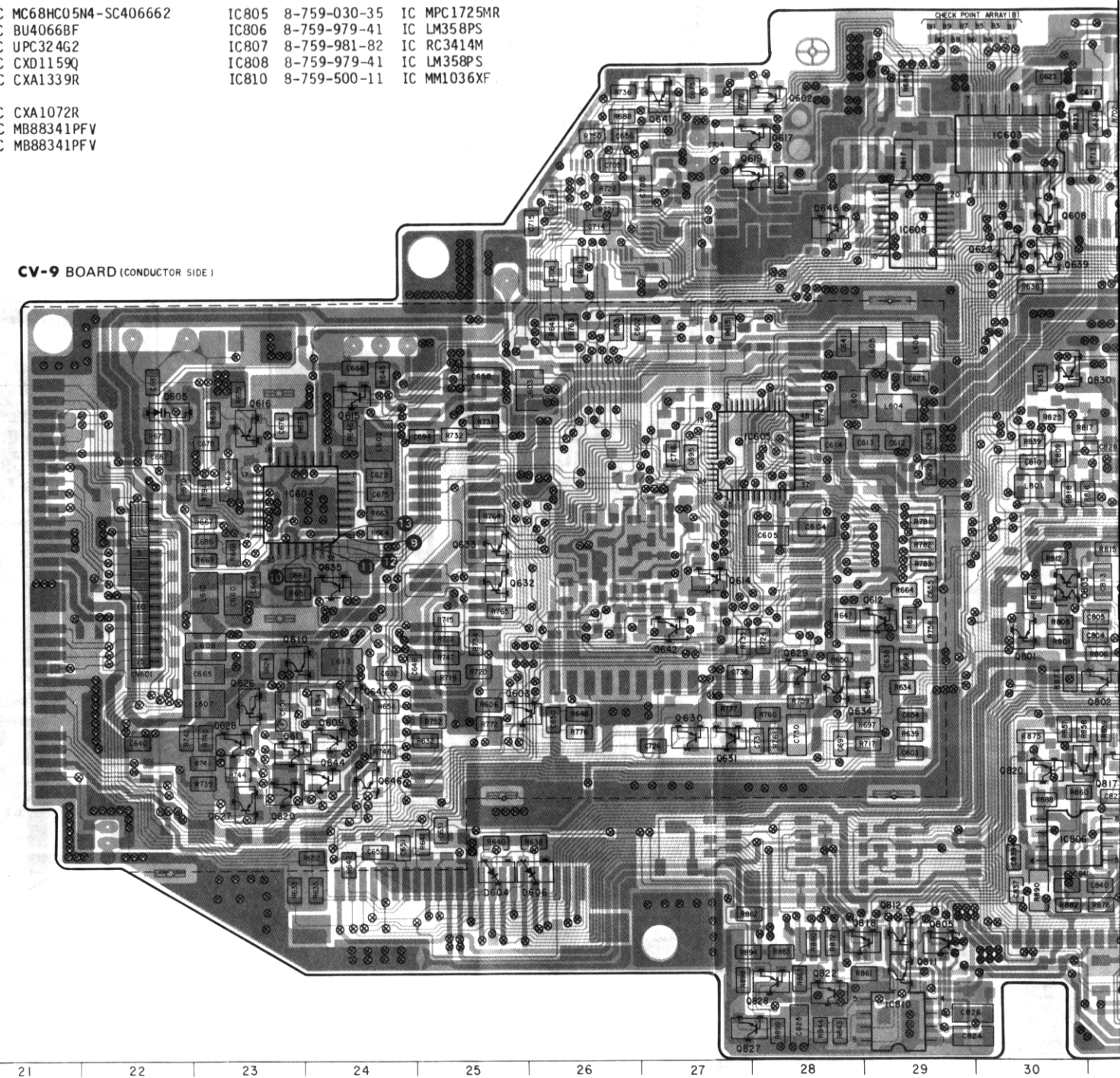
DIODE

D211	8-719-800-76	DIODE	1SS226
D213	8-719-104-31	DIODE	MA152WK
D216	8-719-404-13	DIODE	MA159-TX
D217	8-719-404-13	DIODE	MA159-TX
D218	8-719-104-31	DIODE	MA152WK
D219	8-719-104-31	DIODE	MA152WK
D401	8-719-800-76	DIODE	1SS226
D501	8-713-949-48	DIODE	1T32-2
D601	8-719-104-34	DIODE	1S2836
D602	8-719-104-31	DIODE	MA152WK
D604	8-719-104-31	DIODE	MA152WK
D605	8-713-949-48	DIODE	1T32-2
D606	8-719-104-31	DIODE	MA152WK
D803	8-719-104-31	DIODE	MA152WK

IC

IC201	8-752-033-40	IC	CXA1201Q
IC202	8-752-324-87	IC	CXL1502M
IC203	8-752-034-40	IC	CXA1200BQ
IC501	8-759-140-26	IC	UPD6145G-601
IC502	8-759-970-80	IC	MB873198U
IC601	8-759-032-00	IC	MC68HC05M4-SC406662
IC602	8-759-932-54	IC	BU4066BF
IC603	8-759-100-95	IC	UPC324G2
IC604	8-752-326-08	IC	CXD1159Q
IC605	8-752-034-21	IC	CXA1339R
IC606	8-752-033-34	IC	CXA1072R
IC608	8-759-946-00	IC	MB88341PFV
IC609	8-759-946-00	IC	MB88341PFV
IC610	8-759-937-56	IC	S-8054ALB-LM-S
IC801	8-752-326-18	IC	CXD1204R
IC802	8-759-037-22	IC	MC68HC05C4-SC411533
IC803	8-759-971-93	IC	MSM6219GS
IC804	8-759-946-00	IC	MB88341PFV
IC805	8-759-030-35	IC	MPC1725MR
IC806	8-759-979-41	IC	LM358PS
IC807	8-759-981-82	IC	RC3414M
IC808	8-759-979-41	IC	LM358PS
IC810	8-759-500-11	IC	MM1036XF

CV-9 BOARD (CONDUCTOR SIDE)

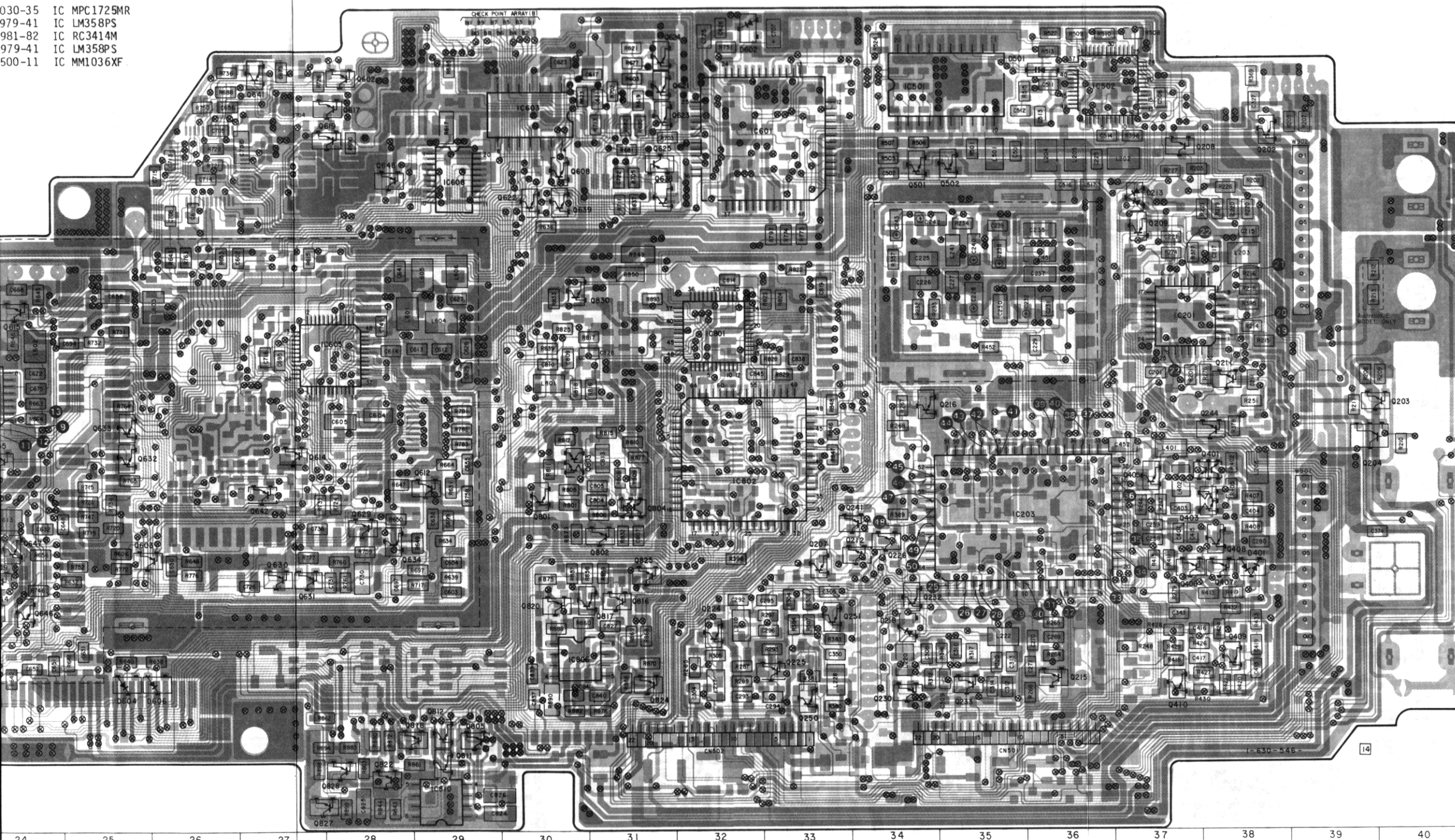


TRANSISTOR

Q202	8-729-100-66	TRANSISTOR	2SC1623
Q203	8-729-100-66	TRANSISTOR	2SC1623
Q204	8-729-101-07	TRANSISTOR	2SB798-DL
Q206	8-729-901-01	TRANSISTOR	DTC144EK
Q207	8-729-901-01	TRANSISTOR	DTC144EK
Q208	8-729-901-01	TRANSISTOR	DTC144EK
Q209	8-729-216-22	TRANSISTOR	2SA1162
Q210	8-729-101-07	TRANSISTOR	2SB798-DL
Q211	8-729-901-01	TRANSISTOR	DTC144EK
Q212	8-729-901-01	TRANSISTOR	DTC144EK
Q213	8-729-		
Q215	8-729-		
Q216	8-729-		
Q217	8-729-		
Q222	8-729-		
Q223	8-729-		
Q224	8-729-		
Q225	8-729-		
Q226	8-729-		
Q227	8-729-		

937-56 IC S-8054ALB-LM-S
326-18 IC CXD1204R
037-22 IC MC68HC05C4-SC411533
971-93 IC MSM6219GS
946-00 IC MB88341PFV

030-35 IC MPC1725MR
979-41 IC LM358PS
981-82 IC RC3414M
979-41 IC LM358PS
500-11 IC MM1036XF



24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

TRANSISTOR

Q202 8-729-100-66 TRANSISTOR 2SC1623
Q203 8-729-100-66 TRANSISTOR 2SC1623
Q204 8-729-101-07 TRANSISTOR 2SB798-DL
Q206 8-729-901-01 TRANSISTOR DTC144EK
Q207 8-729-901-01 TRANSISTOR DTC144EK

Q208 8-729-901-01 TRANSISTOR DTC144EK
Q209 8-729-216-22 TRANSISTOR 2SA1162
Q210 8-729-101-07 TRANSISTOR 2SB798-DL
Q211 8-729-901-01 TRANSISTOR DTC144EK
Q212 8-729-901-01 TRANSISTOR DTC144EK

Q213 8-729-100-66 TRANSISTOR 2SC1623
Q215 8-729-100-66 TRANSISTOR 2SC1623
Q216 8-729-100-66 TRANSISTOR 2SC1623
Q217 8-729-216-22 TRANSISTOR 2SA1162
Q222 8-729-101-07 TRANSISTOR 2SB798-DL

Q223 8-729-901-01 TRANSISTOR DTC144EK
Q224 8-729-102-07 TRANSISTOR 2SC2223-F13
Q225 8-729-100-66 TRANSISTOR 2SC1623
Q226 8-729-901-06 TRANSISTOR DTA144EK
Q227 8-729-805-41 TRANSISTOR 2SC3398

Q228 8-729-100-66 TRANSISTOR 2SC1623
Q229 8-729-216-22 TRANSISTOR 2SA1162
Q230 8-729-122-63 TRANSISTOR 2SA1226
Q231 8-729-102-07 TRANSISTOR 2SC2223-F13
Q232 8-729-102-07 TRANSISTOR 2SC2223-F13

Q233 8-729-216-22 TRANSISTOR 2SA1162
Q241 8-729-901-06 TRANSISTOR DTA144EK
Q242 8-729-901-01 TRANSISTOR DTC144EK
Q243 8-729-100-66 TRANSISTOR 2SC1623
Q244 8-729-901-01 TRANSISTOR DTC144EK

Q250 8-729-100-66 TRANSISTOR 2SC1623
Q251 8-729-216-22 TRANSISTOR 2SA1162
Q254 8-729-100-66 TRANSISTOR 2SC1623
Q401 8-729-402-84 TRANSISTOR XN4601
Q403 8-729-421-23 TRANSISTOR XN1216

Q405 8-729-100-66 TRANSISTOR 2SC1623
Q406 8-729-216-22 TRANSISTOR 2SA1162
Q407 8-729-100-66 TRANSISTOR 2SC1623
Q408 8-729-216-22 TRANSISTOR 2SA1162
Q409 8-729-102-07 TRANSISTOR 2SC2223-F13

Q410 8-729-216-22 TRANSISTOR 2SA1162
Q501 8-729-100-66 TRANSISTOR 2SC1623
Q502 8-729-100-66 TRANSISTOR 2SC1623
Q551 8-729-901-06 TRANSISTOR DTA144EK

Q552 8-729-902-XX TRANSISTOR DTC114TK
Q553 8-729-902-XX TRANSISTOR DTC114TK
Q602 8-729-100-66 TRANSISTOR 2SC1623
Q603 8-729-216-22 TRANSISTOR 2SA1162
Q604 8-729-805-42 TRANSISTOR 2SC3859

Q605 8-729-901-01 TRANSISTOR DTC144EK
Q606 8-729-901-01 TRANSISTOR DTC144EK
Q607 8-729-805-42 TRANSISTOR 2SC3859
Q608 8-729-100-66 TRANSISTOR 2SC1623
Q609 8-729-100-66 TRANSISTOR 2SC1623

Q610 8-729-216-22 TRANSISTOR 2SA1162
Q611 8-729-100-66 TRANSISTOR 2SC1623
Q612 8-729-216-22 TRANSISTOR 2SA1162
Q614 8-729-216-22 TRANSISTOR 2SA1162
Q615 8-729-100-66 TRANSISTOR 2SC1623

Q616 8-729-100-66 TRANSISTOR 2SC1623
Q617 8-729-100-66 TRANSISTOR 2SC1623
Q618 8-729-100-66 TRANSISTOR 2SC1623
Q619 8-729-100-66 TRANSISTOR 2SC1623
Q620 8-729-100-66 TRANSISTOR 2SC1623

Q621 8-729-805-42 TRANSISTOR 2SC3859
Q622 8-729-805-42 TRANSISTOR 2SC3859
Q623 8-729-805-42 TRANSISTOR 2SC3859
Q624 8-729-805-42 TRANSISTOR 2SC3859
Q625 8-729-216-22 TRANSISTOR 2SA1162

Q626 8-729-100-66 TRANSISTOR 2SC1623
Q627 8-729-216-22 TRANSISTOR 2SA1162
Q628 8-729-216-22 TRANSISTOR 2SA1162
Q629 8-729-920-08 TRANSISTOR DTC124TK
Q630 8-729-216-22 TRANSISTOR 2SA1162

Q631 8-729-216-22 TRANSISTOR 2SA1162
Q632 8-729-100-66 TRANSISTOR 2SC1623
Q633 8-729-216-22 TRANSISTOR 2SA1162
Q634 8-729-100-66 TRANSISTOR 2SC1623
Q635 8-729-216-22 TRANSISTOR 2SA1162

Q638 8-729-216-22 TRANSISTOR 2SA1162
Q639 8-729-805-42 TRANSISTOR 2SC3859
Q641 8-729-100-66 TRANSISTOR 2SC1623
Q642 8-729-216-22 TRANSISTOR 2SA1162
Q644 8-729-216-22 TRANSISTOR 2SA1162

Q645 8-729-100-66 TRANSISTOR 2SC1623
Q646 8-729-216-22 TRANSISTOR 2SA1162
Q647 8-729-100-66 TRANSISTOR 2SC1623
Q648 8-729-216-22 TRANSISTOR 2SA1162
Q802 8-729-100-66 TRANSISTOR 2SC1623

Q803 8-729-402-19 TRANSISTOR XN6501
Q804 8-729-402-19 TRANSISTOR XN6501
Q805 8-729-901-01 TRANSISTOR DTC144EK
Q806 8-729-100-66 TRANSISTOR 2SC1623
Q807 8-729-100-66 TRANSISTOR 2SC1623

Q809 8-729-805-42 TRANSISTOR 2SC3859
Q810 8-729-805-42 TRANSISTOR 2SC3859
Q811 8-729-901-06 TRANSISTOR DTA144EK

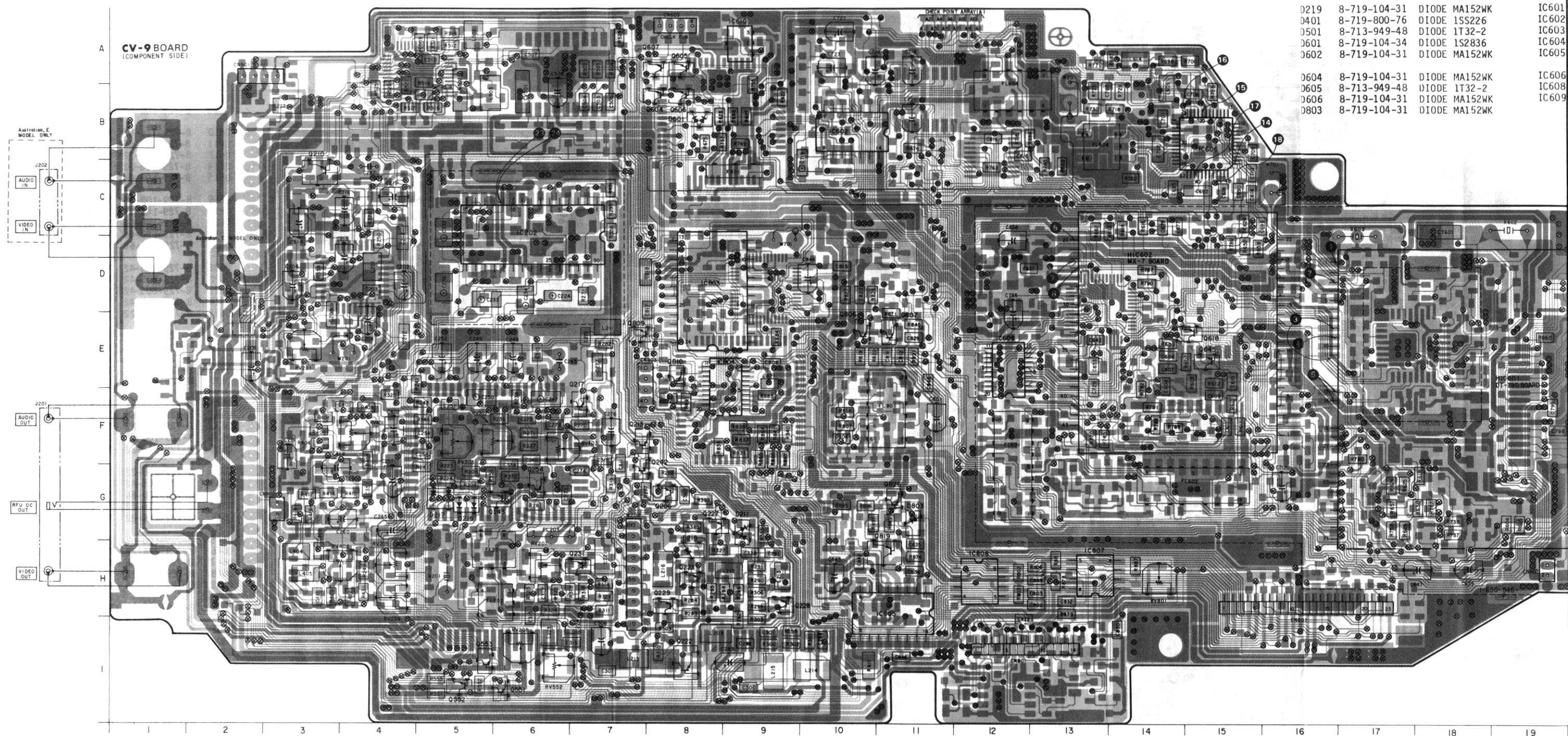
Q812 8-729-901-06 TRANSISTOR DTA144EK
Q816 8-729-100-66 TRANSISTOR 2SC1623
Q817 8-729-216-22 TRANSISTOR 2SA1162
Q818 8-729-100-66 TRANSISTOR 2SC1623
Q819 8-729-119-76 TRANSISTOR 2SB1175-HFE

Q820 8-729-100-66 TRANSISTOR 2SC1623
Q822 8-729-216-22 TRANSISTOR 2SA1162
Q824 8-729-901-01 TRANSISTOR DTC144EK
Q825 8-729-901-01 TRANSISTOR DTC144EK
Q826 8-729-216-22 TRANSISTOR 2SA1162

Q827 8-729-100-66 TRANSISTOR 2SC1623
Q828 8-729-216-22 TRANSISTOR 2SA1162
Q830 8-729-805-42 TRANSISTOR 2SC3859

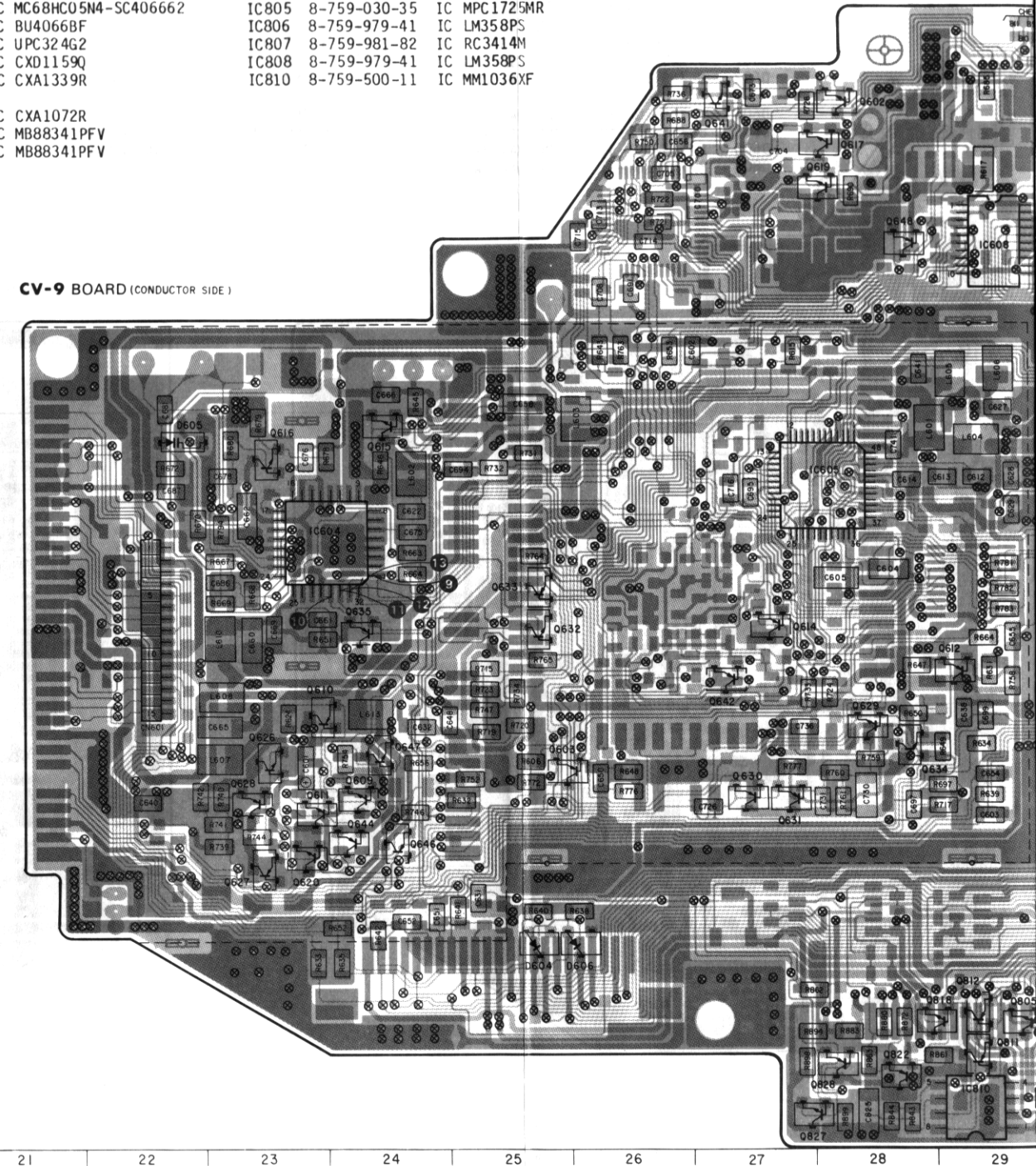
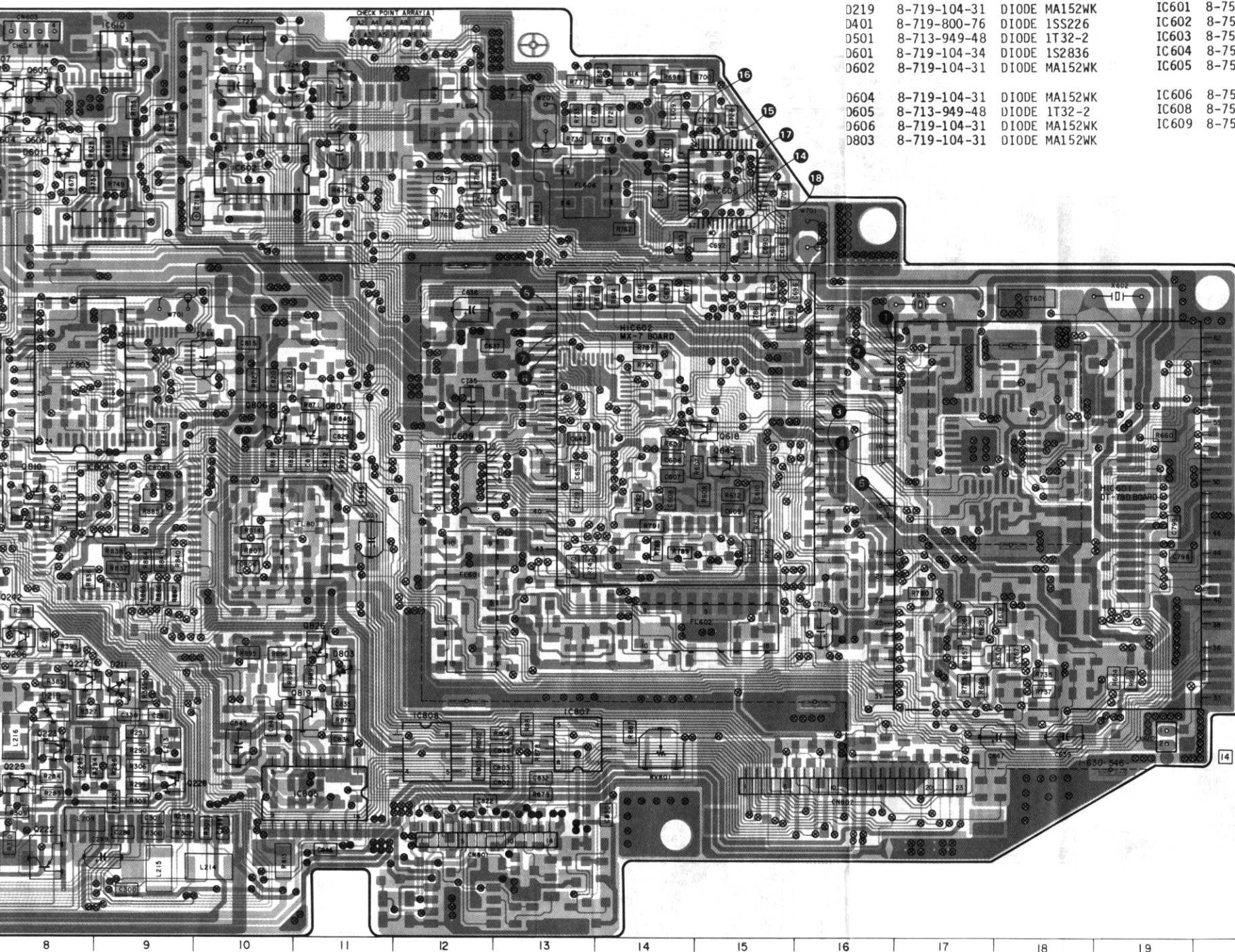
CV-9 (CAMERA, VIDEO PROCESS) PRINTED WIRING BOARDS

— Ref. No. CV-9 BOARD: 2000 series —



DIODE

D211	8-719-800-76	DIODE 1SS226	IC201
D213	8-719-104-31	DIODE MA152WK	IC202
D216	8-719-404-13	DIODE MA159-TX	IC203
D217	8-719-404-13	DIODE MA159-TX	IC501
D218	8-719-104-31	DIODE MA152WK	IC502
D219	8-719-104-31	DIODE MA152WK	IC601
D401	8-719-800-76	DIODE 1SS226	IC602
D501	8-713-949-48	DIODE 1T32-2	IC603
D601	8-719-104-34	DIODE 1S2836	IC604
D602	8-719-104-31	DIODE MA152WK	IC605
D604	8-719-104-31	DIODE MA152WK	IC606
D605	8-713-949-48	DIODE 1T32-2	IC608
D606	8-719-104-31	DIODE MA152WK	IC609
D803	8-719-104-31	DIODE MA152WK	



DIODE

D211	8-719-800-76	DIODE	1SS226
D213	8-719-104-31	DIODE	MA152WK
D216	8-719-404-13	DIODE	MA159-TX
D217	8-719-404-13	DIODE	MA159-TX
D218	8-719-104-31	DIODE	MA152WK
D219	8-719-104-31	DIODE	MA152WK
D401	8-719-800-76	DIODE	1SS226
D501	8-713-949-48	DIODE	1T32-2
D601	8-719-104-34	DIODE	1S2836
D602	8-719-104-31	DIODE	MA152WK
D604	8-719-104-31	DIODE	MA152WK
D605	8-713-949-48	DIODE	1T32-2
D606	8-719-104-31	DIODE	MA152WK
D803	8-719-104-31	DIODE	MA152WK

IC

IC201	8-752-033-40	IC	CXA1201Q
IC202	8-752-324-87	IC	CXL1502M
IC203	8-752-034-40	IC	CXA1200BQ
IC501	8-759-140-26	IC	UPD6145G-601
IC502	8-759-970-80	IC	MB673198U
IC601	8-759-032-00	IC	MC68HC05N4-SC406662
IC602	8-759-932-54	IC	BU4066BF
IC603	8-759-100-95	IC	UPC324G2
IC604	8-752-326-08	IC	CXD1159Q
IC605	8-752-034-21	IC	CXA1339R
IC606	8-752-033-34	IC	CXA1072R
IC608	8-759-946-00	IC	MB88341PFV
IC609	8-759-946-00	IC	MB88341PFV
IC610	8-759-937-56	IC	S-8054ALB-LM-S
IC801	8-752-326-18	IC	CXD1204R
IC802	8-759-037-22	IC	MC68HC05C4-SC411533
IC803	8-759-971-93	IC	MSM6219G5
IC804	8-759-946-00	IC	MB88341PFV
IC805	8-759-030-35	IC	MPC1725MR
IC806	8-759-979-41	IC	LM358PS
IC807	8-759-981-82	IC	RC3414M
IC808	8-759-979-41	IC	LM358PS
IC810	8-759-500-11	IC	MM1036XF

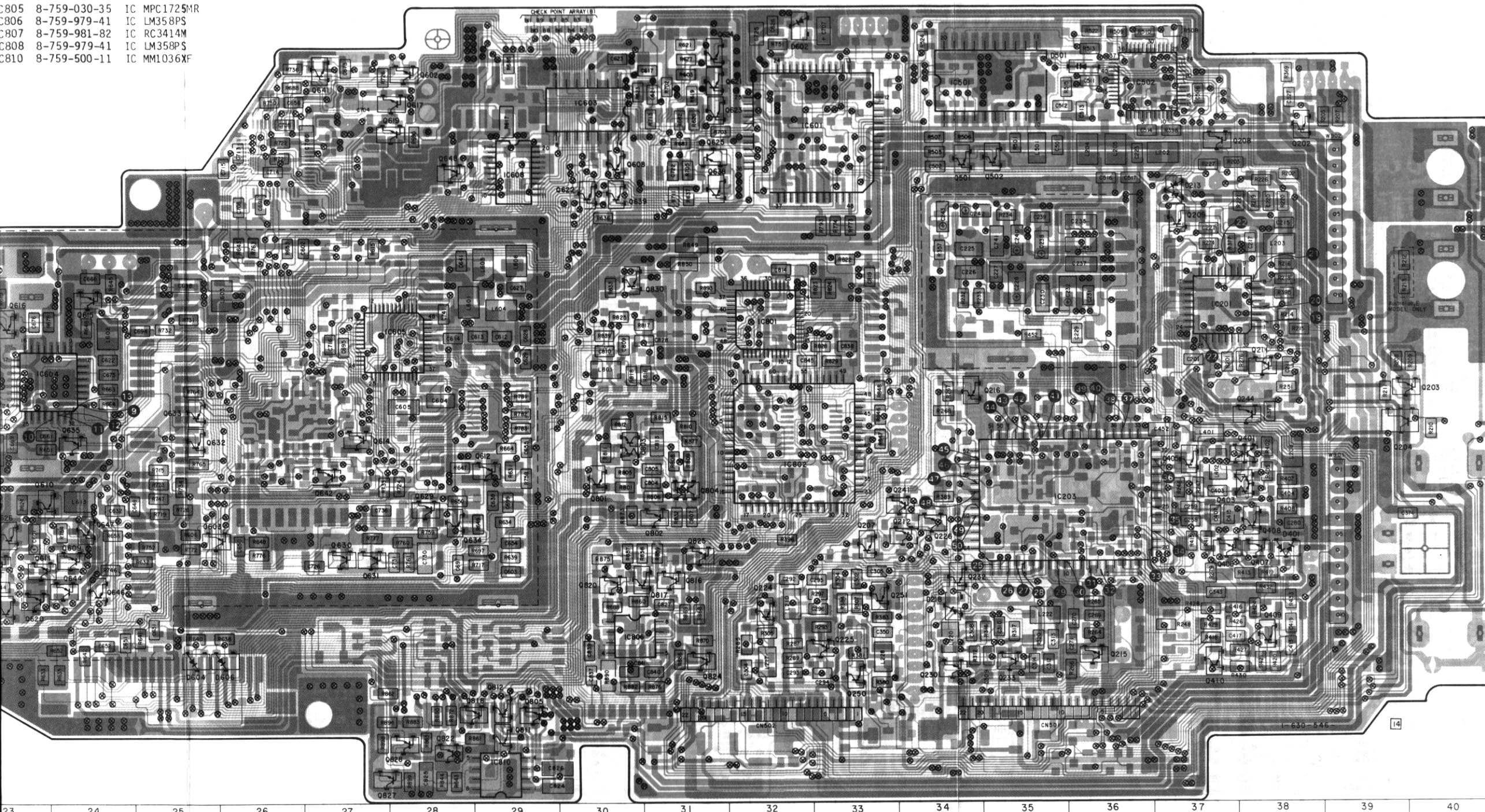
CV-9 BOARD (CONDUCTOR SIDE)

TRANSISTOR

Q202	8-729-100-66	TRANSISTOR	2SC1623
Q203	8-729-100-66	TRANSISTOR	2SC1623
Q204	8-729-101-07	TRANSISTOR	2SB798-D
Q206	8-729-901-01	TRANSISTOR	DTC144EK
Q207	8-729-901-01	TRANSISTOR	DTC144EK
Q208	8-729-901-01	TRANSISTOR	DTC144EK
Q209	8-729-216-22	TRANSISTOR	2SA1162
Q210	8-729-101-07	TRANSISTOR	2SB798-D
Q211	8-729-901-01	TRANSISTOR	DTC144EK
Q212	8-729-901-01	TRANSISTOR	DTC144EK

C610 8-759-937-56 IC S-8054ALB-LM-S
C801 8-752-326-18 IC CXD1204R
C802 8-759-037-22 IC MC68HC05C4-SC411533
C803 8-759-971-93 IC MSM6219GS
C804 8-759-946-00 IC MB88341PFV

C805 8-759-030-35 IC MPC1725MR
C806 8-759-979-41 IC LM358PS
C807 8-759-981-82 IC RC3414M
C808 8-759-979-41 IC LM358PS
C810 8-759-500-11 IC MM1036XF



23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

TRANSISTOR

Q202 8-729-100-66 TRANSISTOR 2SC1623
Q203 8-729-100-66 TRANSISTOR 2SC1623
Q204 8-729-101-07 TRANSISTOR 2SB798-DL
Q206 8-729-901-01 TRANSISTOR DTC144EK
Q207 8-729-901-01 TRANSISTOR DTC144EK

Q208 8-729-901-01 TRANSISTOR DTC144EK
Q209 8-729-216-22 TRANSISTOR 2SA1162
Q210 8-729-101-07 TRANSISTOR 2SB798-DL
Q211 8-729-901-01 TRANSISTOR DTC144EK
Q212 8-729-901-01 TRANSISTOR DTC144EK

Q213 8-729-100-66 TRANSISTOR 2SC1623
Q215 8-729-100-66 TRANSISTOR 2SC1623
Q216 8-729-100-66 TRANSISTOR 2SC1623
Q217 8-729-216-22 TRANSISTOR 2SA1162
Q222 8-729-101-07 TRANSISTOR 2SB798-DL

Q223 8-729-901-01 TRANSISTOR DTC144EK
Q224 8-729-102-07 TRANSISTOR 2SC2223-F13
Q225 8-729-100-66 TRANSISTOR 2SC1623
Q226 8-729-901-06 TRANSISTOR DTA144EK
Q227 8-729-805-41 TRANSISTOR 2SC3398

Q228 8-729-100-66 TRANSISTOR 2SC1623
Q229 8-729-216-22 TRANSISTOR 2SA1162
Q230 8-729-122-63 TRANSISTOR 2SA1226
Q231 8-729-102-07 TRANSISTOR 2SC2223-F13
Q232 8-729-102-07 TRANSISTOR 2SC2223-F13

Q233 8-729-216-22 TRANSISTOR 2SA1162
Q241 8-729-901-06 TRANSISTOR DTA144EK
Q242 8-729-901-01 TRANSISTOR DTC144EK
Q243 8-729-100-66 TRANSISTOR 2SC1623
Q244 8-729-901-01 TRANSISTOR DTC144EK

Q250 8-729-100-66 TRANSISTOR 2SC1623
Q251 8-729-216-22 TRANSISTOR 2SA1162
Q254 8-729-100-66 TRANSISTOR 2SC1623
Q401 8-729-402-84 TRANSISTOR XN4601
Q403 8-729-421-23 TRANSISTOR XN1216

Q405 8-729-100-66 TRANSISTOR 2SC1623
Q406 8-729-216-22 TRANSISTOR 2SA1162
Q407 8-729-100-66 TRANSISTOR 2SC1623
Q408 8-729-216-22 TRANSISTOR 2SA1162
Q409 8-729-102-07 TRANSISTOR 2SC2223-F13

Q410 8-729-216-22 TRANSISTOR 2SA1162
Q501 8-729-100-66 TRANSISTOR 2SC1623
Q502 8-729-100-66 TRANSISTOR 2SC1623
Q551 8-729-901-06 TRANSISTOR DTA144EK

Q552 8-729-902-XX TRANSISTOR DTC114TK
Q553 8-729-902-XX TRANSISTOR DTC114TK
Q602 8-729-100-66 TRANSISTOR 2SC1623
Q603 8-729-216-22 TRANSISTOR 2SA1162
Q604 8-729-805-42 TRANSISTOR 2SC3859

Q605 8-729-901-01 TRANSISTOR DTC144EK
Q606 8-729-901-01 TRANSISTOR DTC144EK
Q607 8-729-805-42 TRANSISTOR 2SC3859
Q608 8-729-100-66 TRANSISTOR 2SC1623
Q609 8-729-100-66 TRANSISTOR 2SC1623

Q610 8-729-216-22 TRANSISTOR 2SA1162
Q611 8-729-100-66 TRANSISTOR 2SC1623
Q612 8-729-216-22 TRANSISTOR 2SA1162
Q614 8-729-216-22 TRANSISTOR 2SA1162
Q615 8-729-100-66 TRANSISTOR 2SC1623

Q616 8-729-100-66 TRANSISTOR 2SC1623
Q617 8-729-100-66 TRANSISTOR 2SC1623
Q618 8-729-100-66 TRANSISTOR 2SC1623
Q619 8-729-100-66 TRANSISTOR 2SC1623
Q620 8-729-100-66 TRANSISTOR 2SC1623

Q621 8-729-805-42 TRANSISTOR 2SC3859
Q622 8-729-805-42 TRANSISTOR 2SC3859
Q623 8-729-805-42 TRANSISTOR 2SC3859
Q624 8-729-805-42 TRANSISTOR 2SC3859
Q625 8-729-216-22 TRANSISTOR 2SA1162

Q626 8-729-100-66 TRANSISTOR 2SC1623
Q627 8-729-216-22 TRANSISTOR 2SA1162
Q628 8-729-216-22 TRANSISTOR 2SA1162
Q629 8-729-920-08 TRANSISTOR DTC124TK
Q630 8-729-216-22 TRANSISTOR 2SA1162

Q631 8-729-216-22 TRANSISTOR 2SA1162
Q632 8-729-100-66 TRANSISTOR 2SC1623
Q633 8-729-216-22 TRANSISTOR 2SA1162
Q634 8-729-100-66 TRANSISTOR 2SC1623
Q635 8-729-216-22 TRANSISTOR 2SA1162

Q638 8-729-216-22 TRANSISTOR 2SA1162
Q639 8-729-805-42 TRANSISTOR 2SC3859
Q641 8-729-100-66 TRANSISTOR 2SC1623
Q642 8-729-216-22 TRANSISTOR 2SA1162
Q644 8-729-216-22 TRANSISTOR 2SA1162

Q645 8-729-100-66 TRANSISTOR 2SC1623
Q646 8-729-216-22 TRANSISTOR 2SA1162
Q647 8-729-100-66 TRANSISTOR 2SC1623
Q648 8-729-216-22 TRANSISTOR 2SA1162
Q802 8-729-100-66 TRANSISTOR 2SC1623

Q803 8-729-402-19 TRANSISTOR XN6501
Q804 8-729-402-19 TRANSISTOR XN6501
Q805 8-729-901-01 TRANSISTOR DTC144EK
Q806 8-729-100-66 TRANSISTOR 2SC1623
Q807 8-729-100-66 TRANSISTOR 2SC1623

Q809 8-729-805-42 TRANSISTOR 2SC3859
Q810 8-729-805-42 TRANSISTOR 2SC3859
Q811 8-729-901-06 TRANSISTOR DTA144EK

Q812 8-729-901-06 TRANSISTOR DTA144EK
Q816 8-729-100-66 TRANSISTOR 2SC1623
Q817 8-729-216-22 TRANSISTOR 2SA1162
Q818 8-729-100-66 TRANSISTOR 2SC1623
Q819 8-729-119-76 TRANSISTOR 2SB1175-HFE

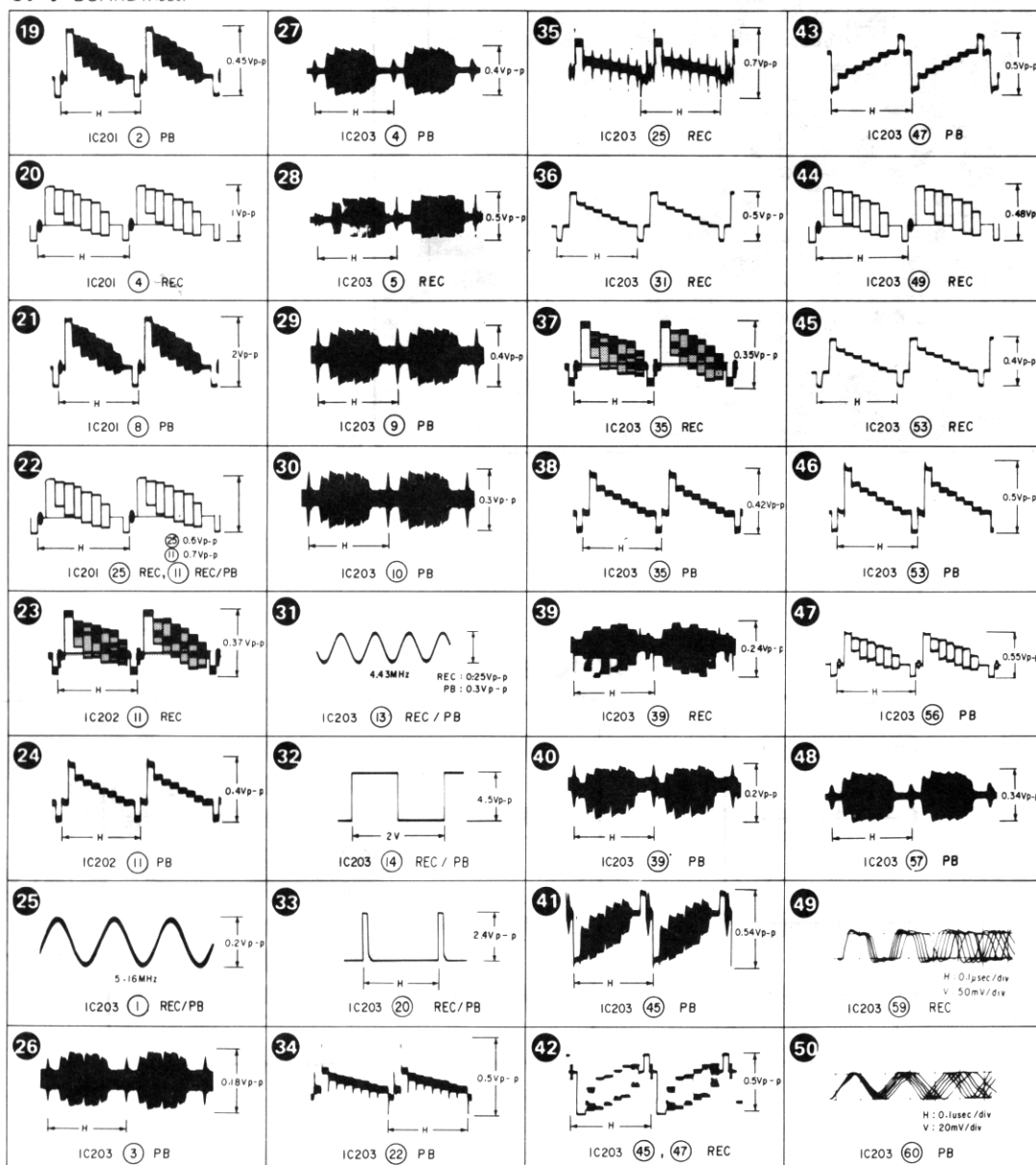
Q820 8-729-100-66 TRANSISTOR 2SC1623
Q822 8-729-216-22 TRANSISTOR 2SA1162
Q824 8-729-901-01 TRANSISTOR DTC144EK
Q825 8-729-901-01 TRANSISTOR DTC144EK
Q826 8-729-216-22 TRANSISTOR 2SA1162

Q827 8-729-100-66 TRANSISTOR 2SC1623
Q828 8-729-216-22 TRANSISTOR 2SA1162
Q830 8-729-805-42 TRANSISTOR 2SC3859

CV-9 (VIDEO PROCESS) SCHEMATIC DIAGRAMS

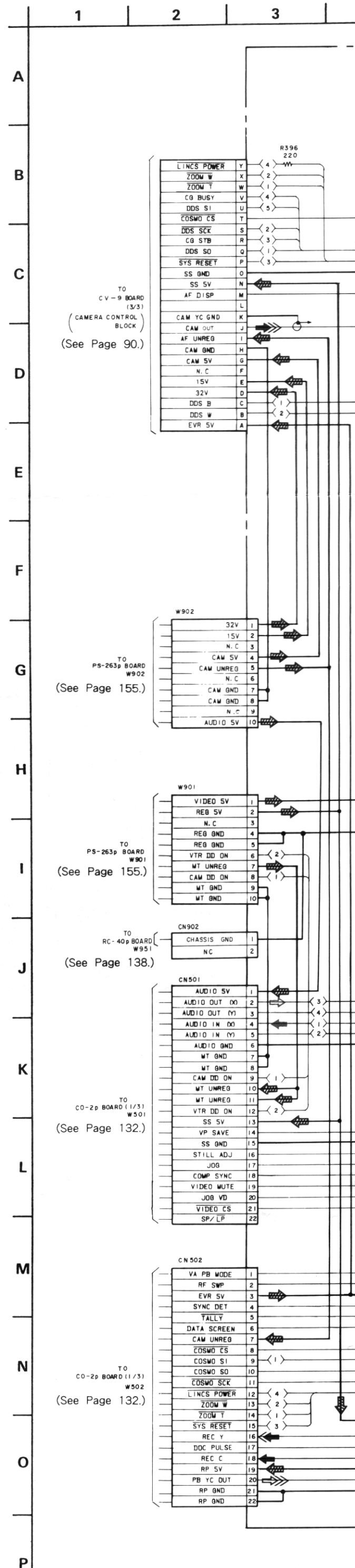
— Ref. No. CV-9 BOARD: 2000 series —

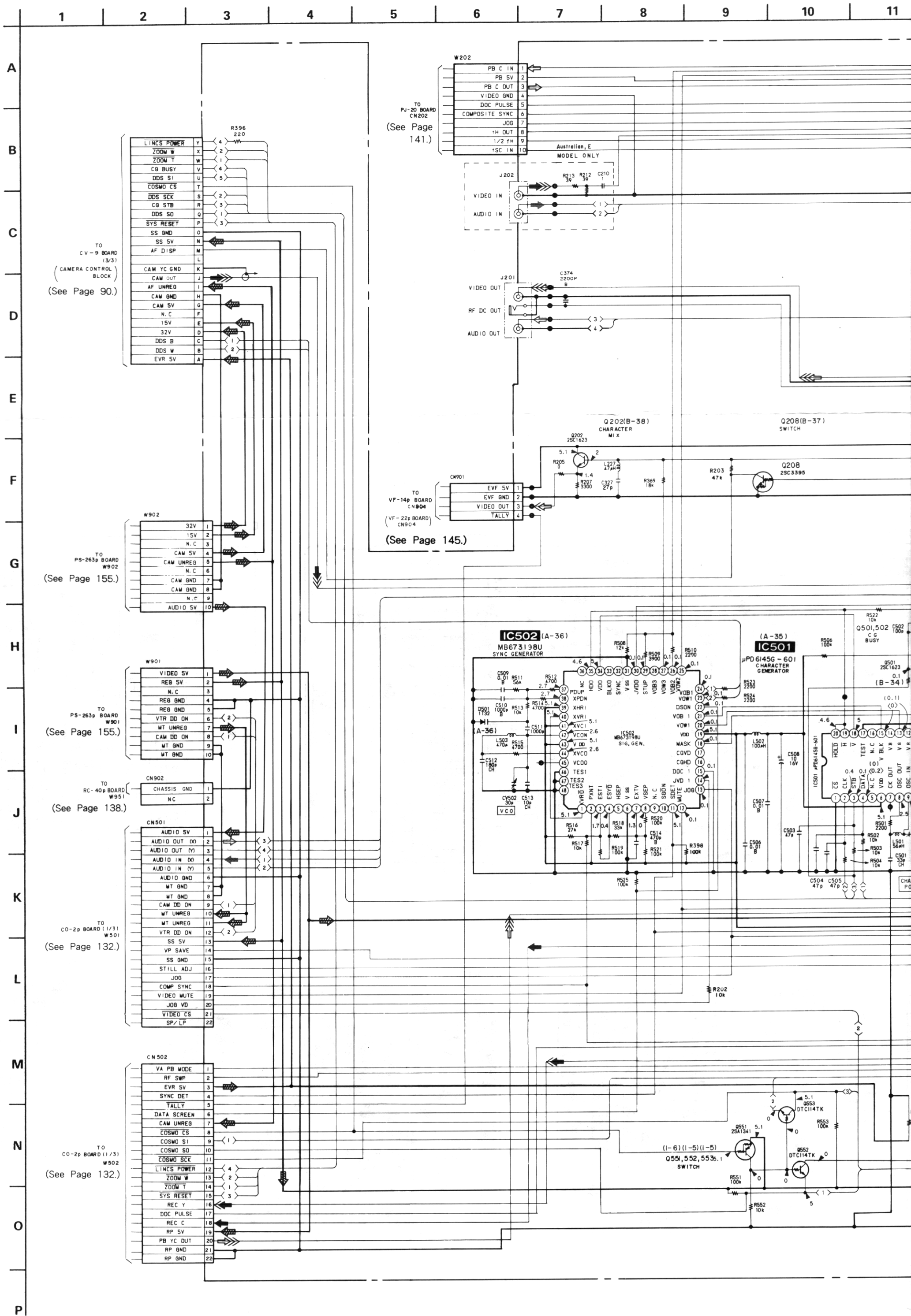
CV-9 BOARD (VIDEO)

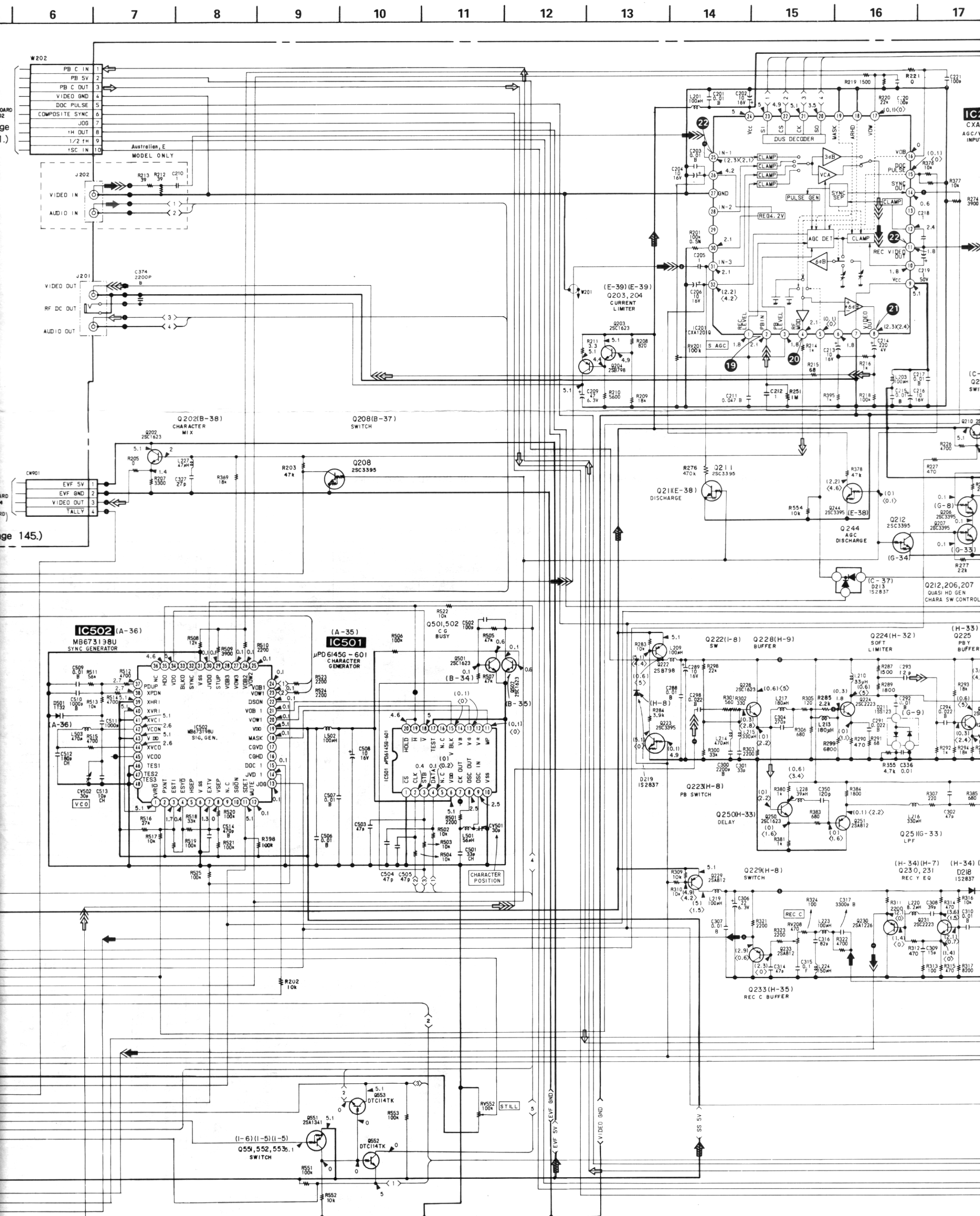


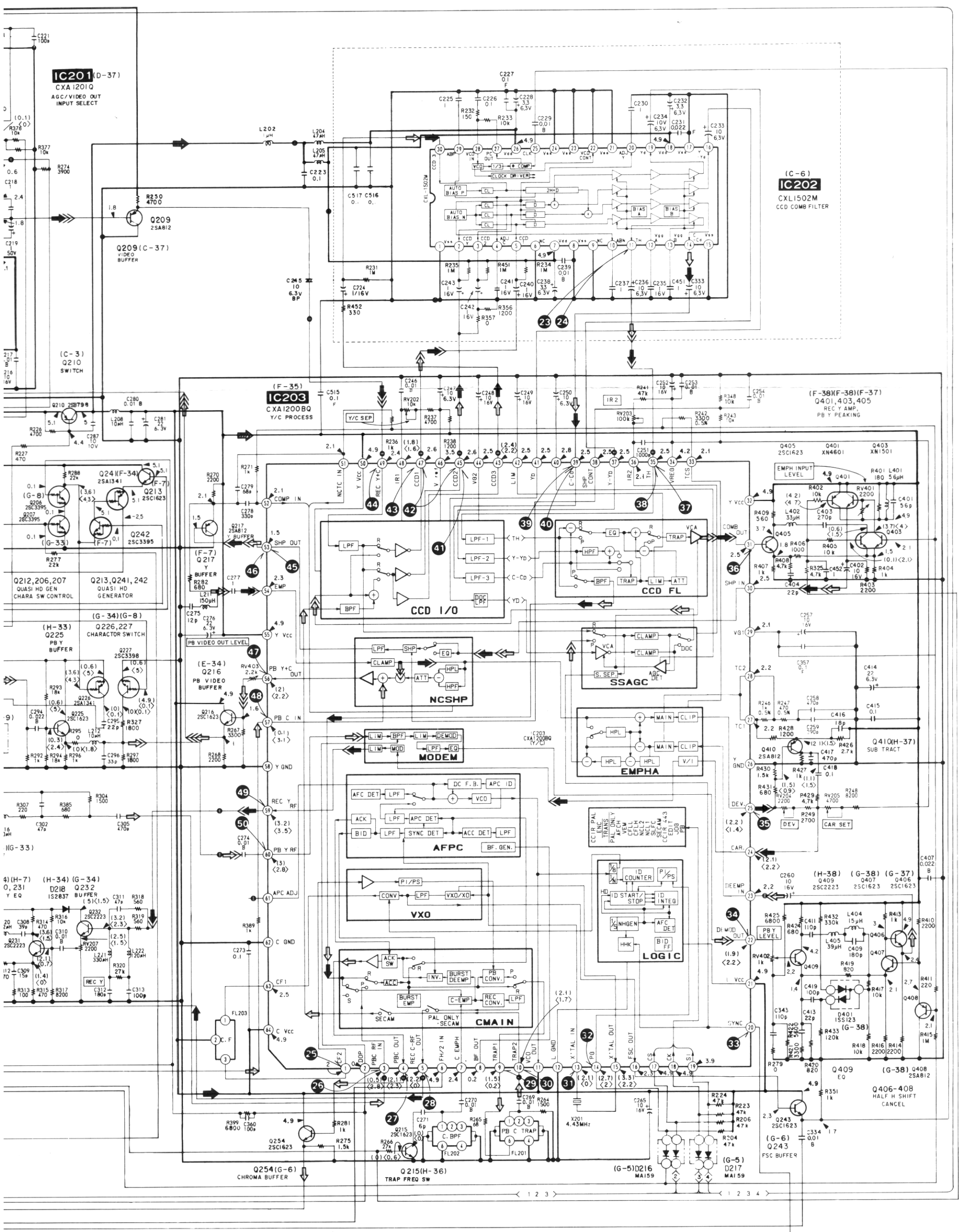
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	→	→	→	→
PB	→	→	→	→







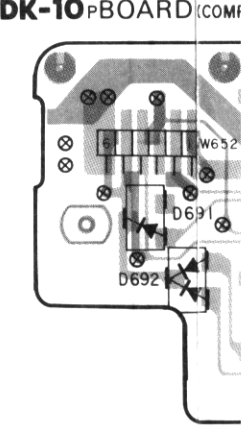
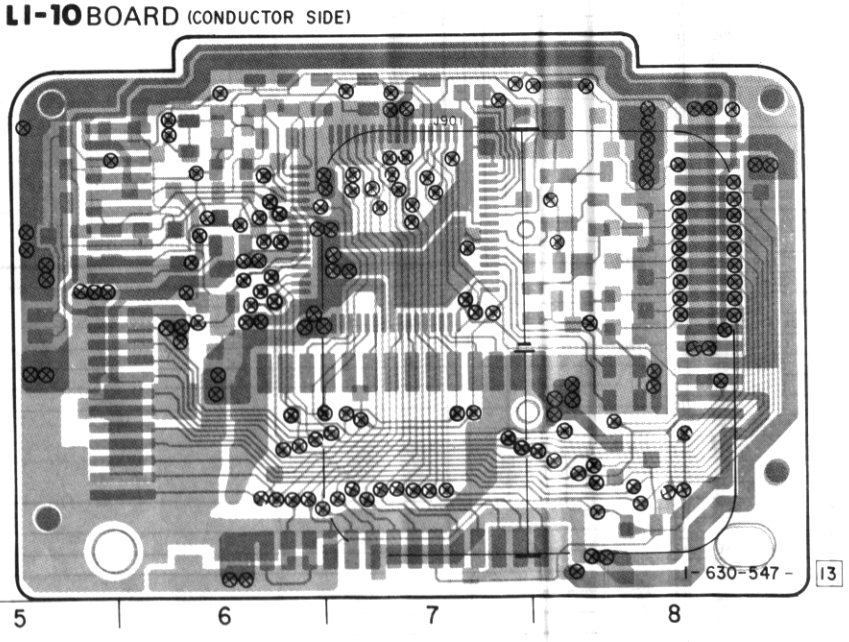
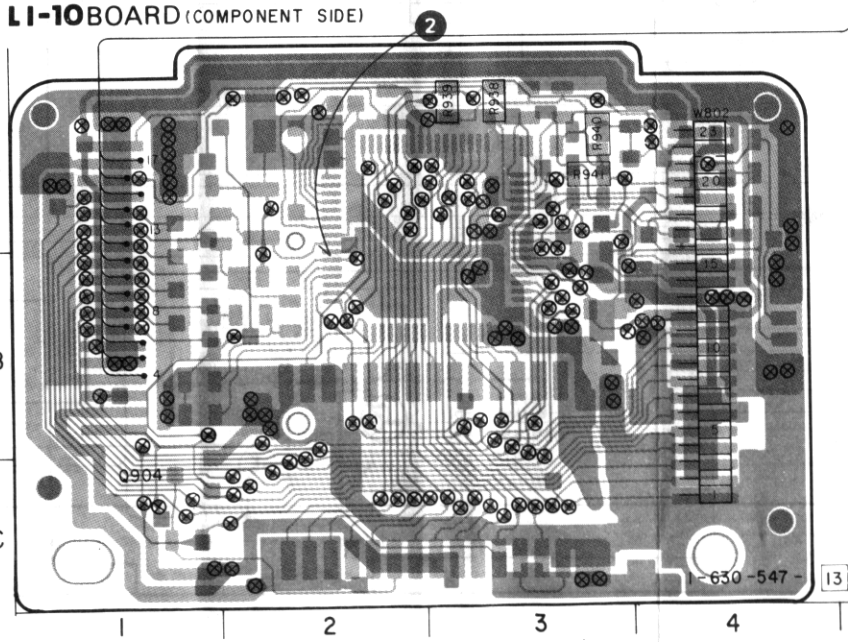
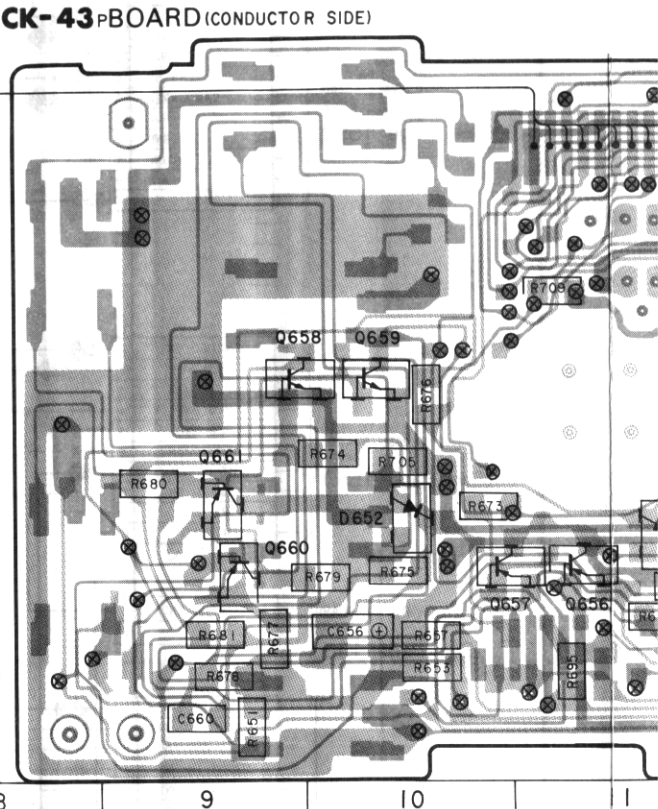
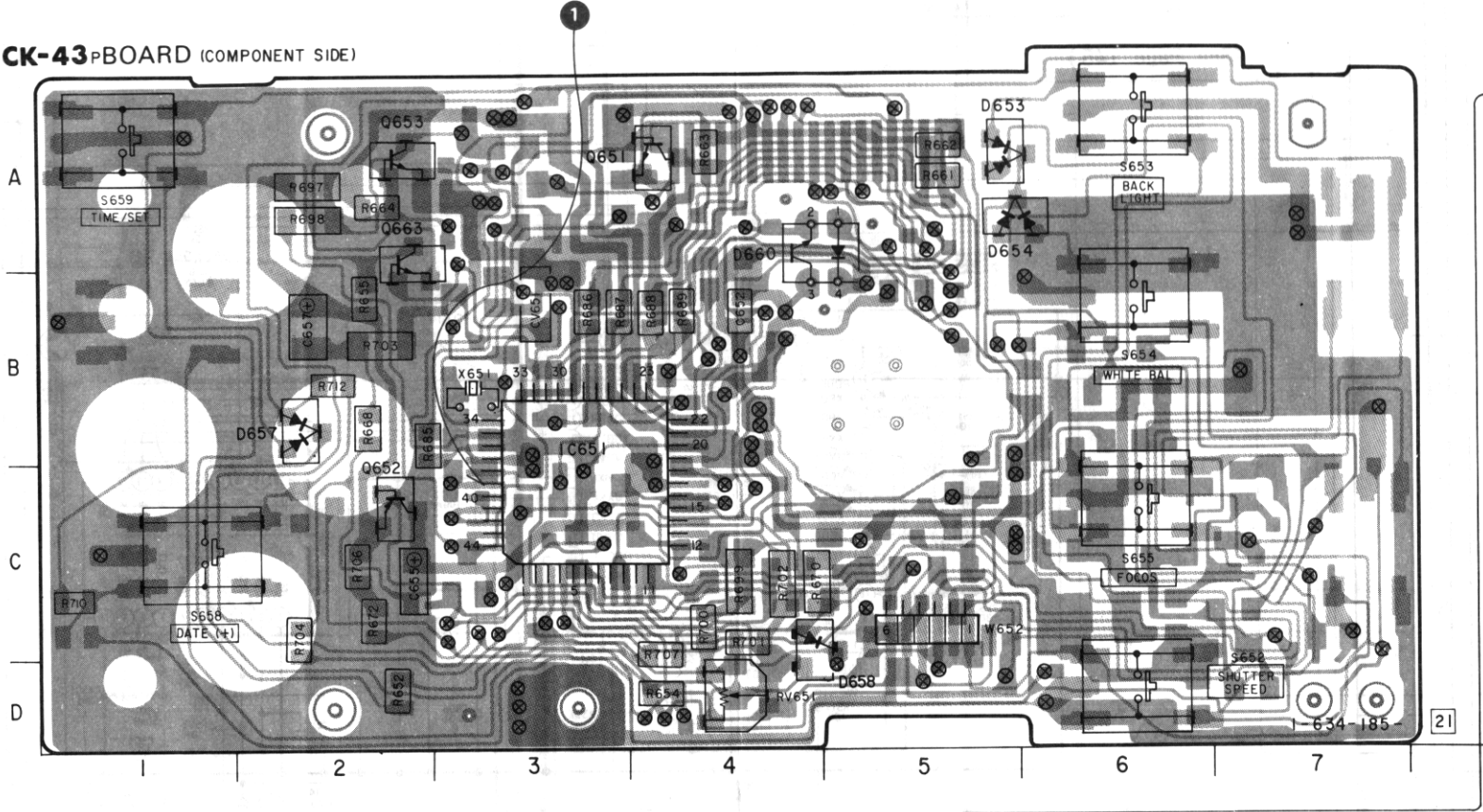


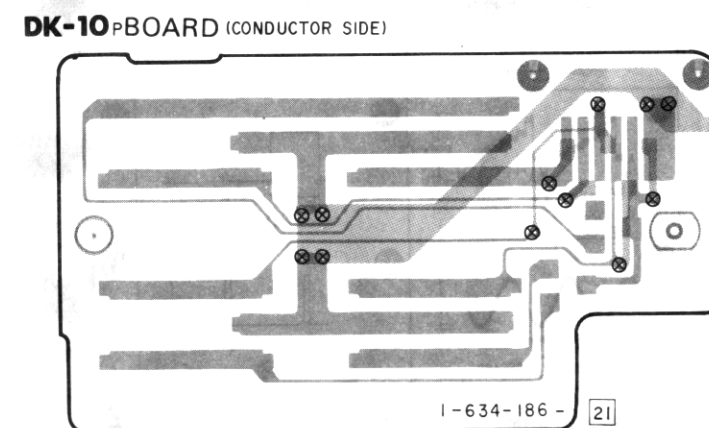
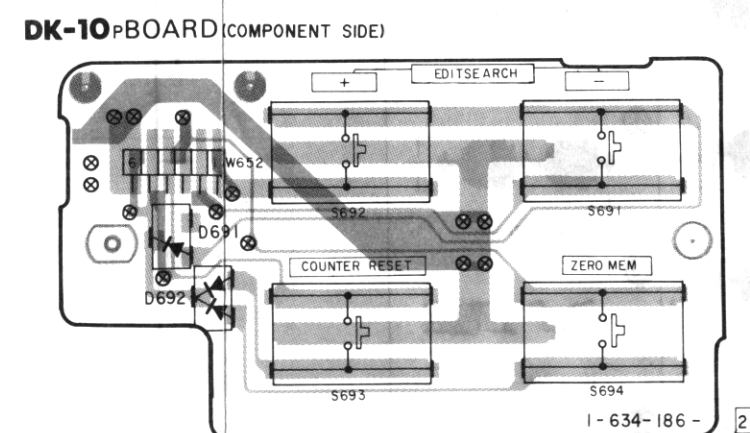
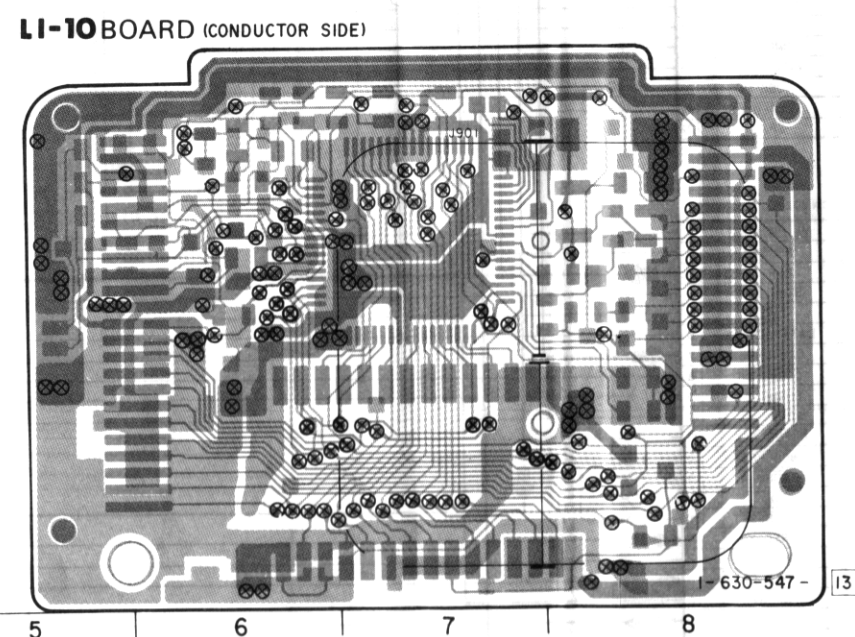
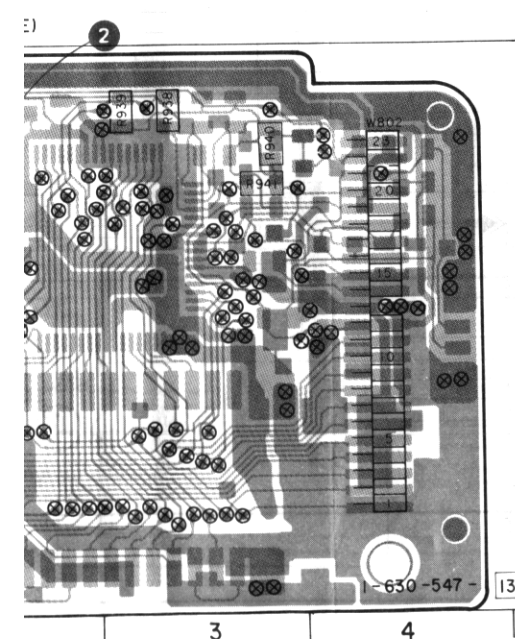
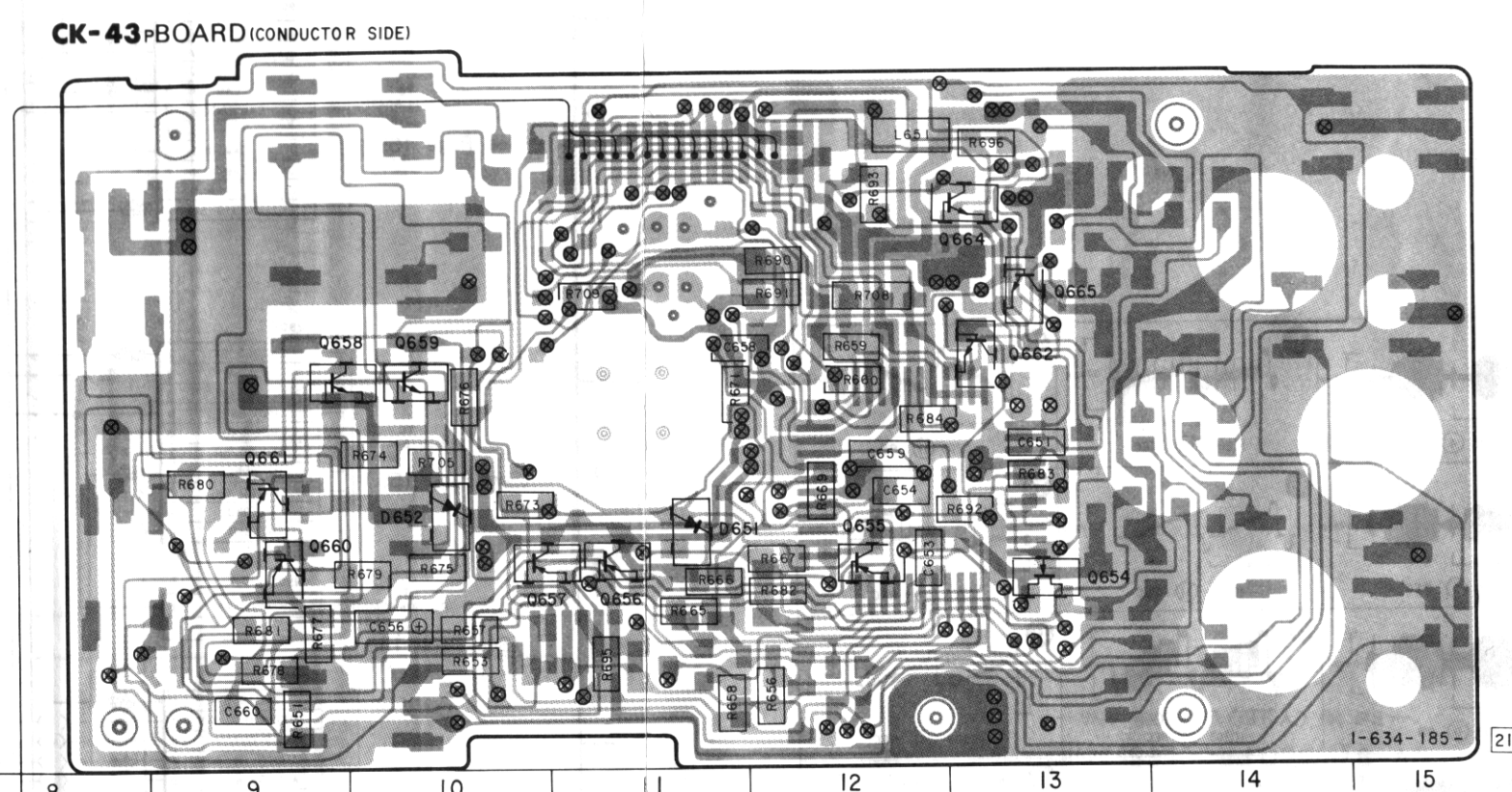
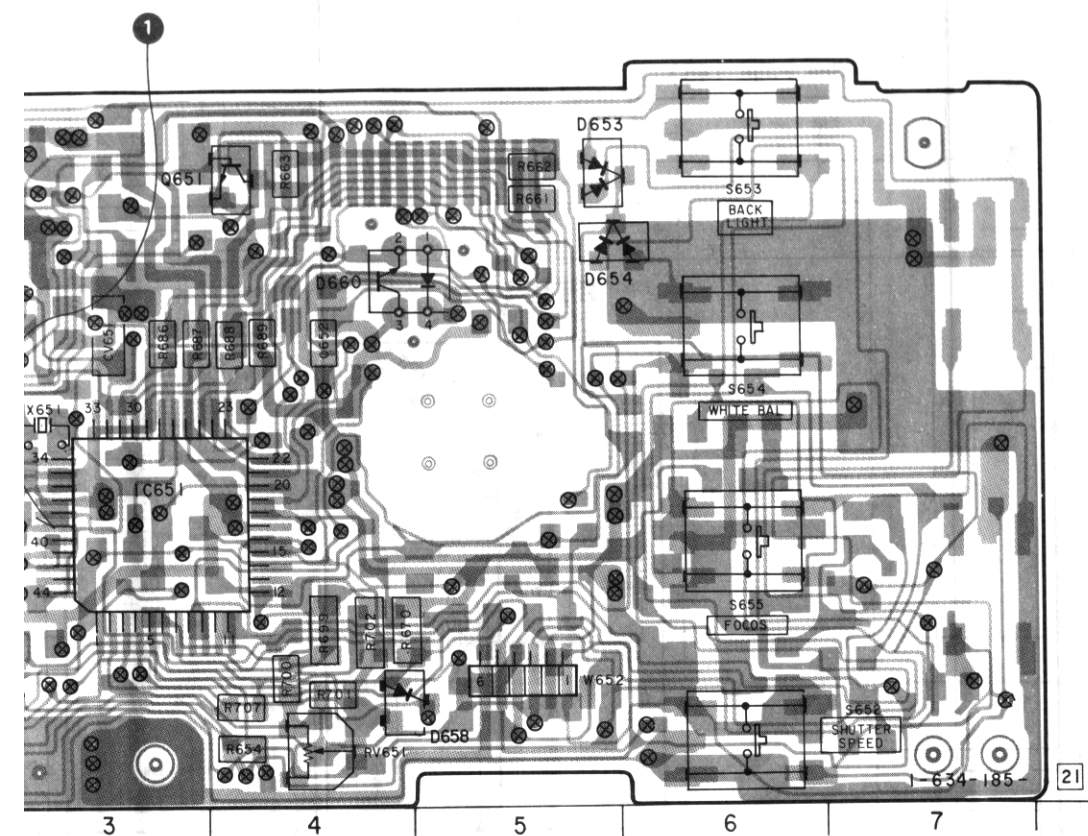
no mark : REC/PB mode
() : REC mode
< > : PB mode

LI-10 (RELAY), CK-43P (CAMERA FUNCTION SWITCH),
DK-10P (EDIT SEARCH SWITCH) PRINTED WIRING BOARDS

- Ref. No. LI-10 BOARD : 3000 series, CK-43P BOARD : 4000 series, DK-10P BOARD : 5000 series -

DIODE		
D651	8-719-938-72	DIODE SB01-05CP
D652	8-719-801-48	DIODE 1SS193
D653	8-719-104-31	DIODE MA152WK
D654	8-719-104-31	DIODE MA152WK
D657	8-719-104-31	DIODE MA152WK
D658	8-719-801-48	DIODE 1SS193
D660	8-719-939-11	DIODE GP2S09-B
IC		
IC651	8-759-149-19	IC UPD7508BGB-516
TRANSISTOR		
Q651	8-729-901-03	TRANSISTOR DTC144WK
Q652	8-729-216-22	TRANSISTOR 2SA1162G
Q653	8-729-901-03	TRANSISTOR DTC144WK
Q654	8-729-220-93	TRANSISTOR 2SK209G
Q655	8-729-216-22	TRANSISTOR 2SA1162G
Q656	8-729-216-22	TRANSISTOR 2SA1162G
Q657	8-729-216-22	TRANSISTOR 2SA1162G
Q658	8-729-100-66	TRANSISTOR 2SC1623
Q659	8-729-100-66	TRANSISTOR 2SC1623
Q660	8-729-216-22	TRANSISTOR 2SA1162G
Q661	8-729-216-22	TRANSISTOR 2SA1162G
Q662	8-729-902-XX	TRANSISTOR DTC114TK
Q663	8-729-902-XX	TRANSISTOR DTC114TK
Q664	8-729-216-22	TRANSISTOR 2SA1162G
Q665	8-729-901-01	TRANSISTOR DTC144EK





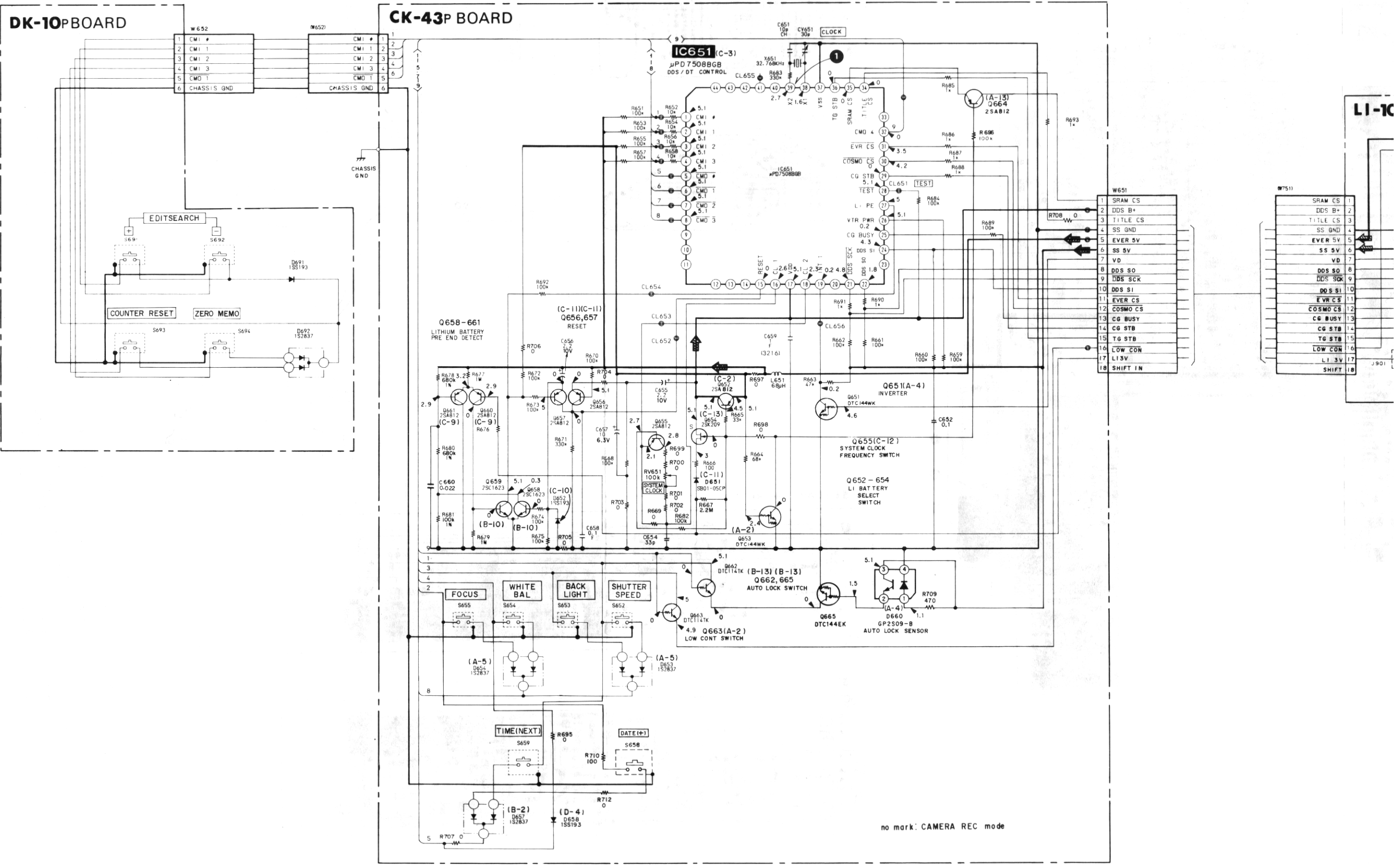
DK-10P BOARD

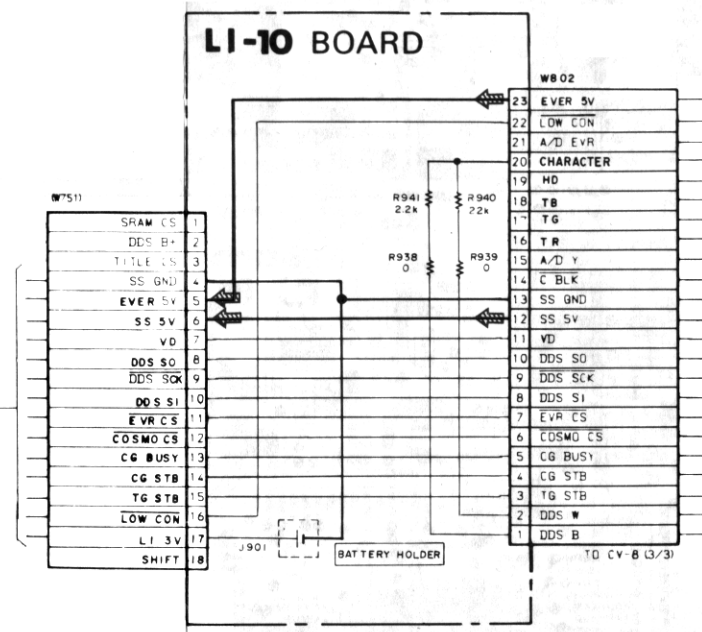
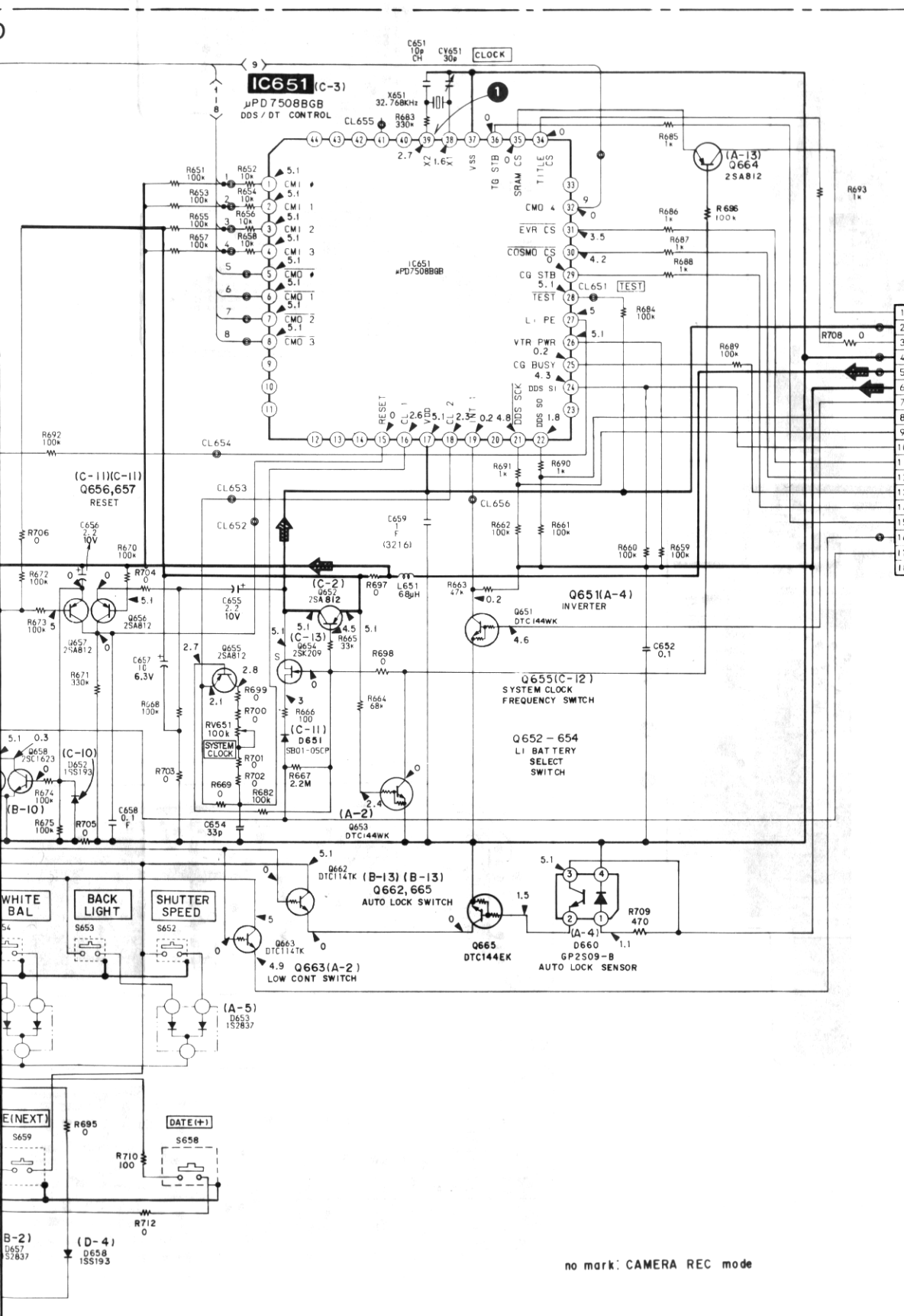
DIODE

D691 8-719-801-48 DIODE 1SS193-TE85L
D692 8-719-104-31 DIODE MA152WK

LI-10 (RELAY), CK-43P (CAMERA FUNCTION SWITCH),
DK-10P (EDIT SEARCH SWITCH) SCHEMATIC DIAGRAMS

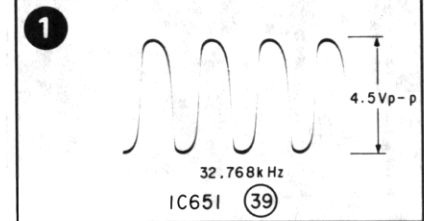
- Ref. No. LI-10 BOARD : 3000 series, CK-43P BOARD : 4000 series, DK-10P BOARD : 5000 series -



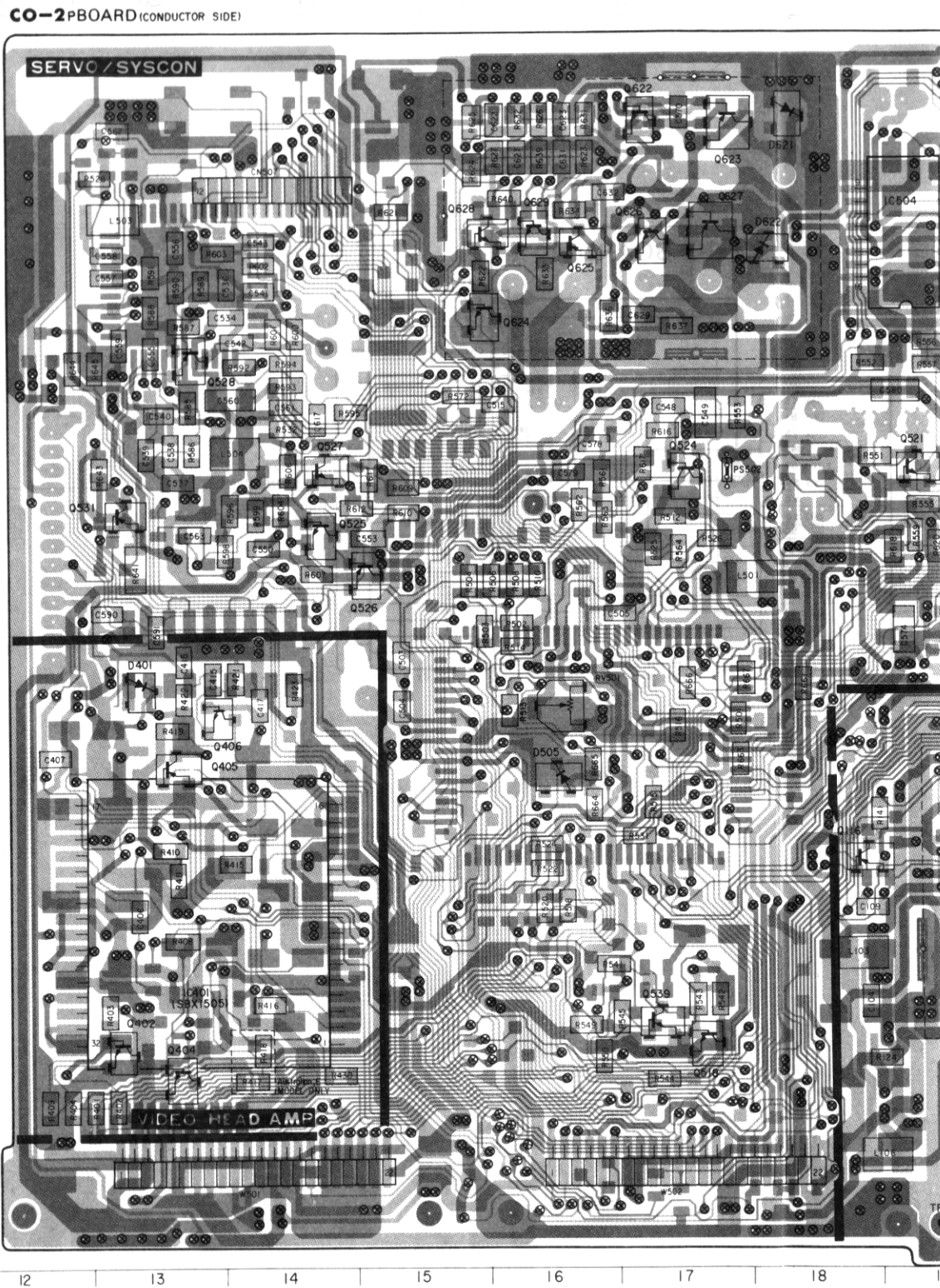
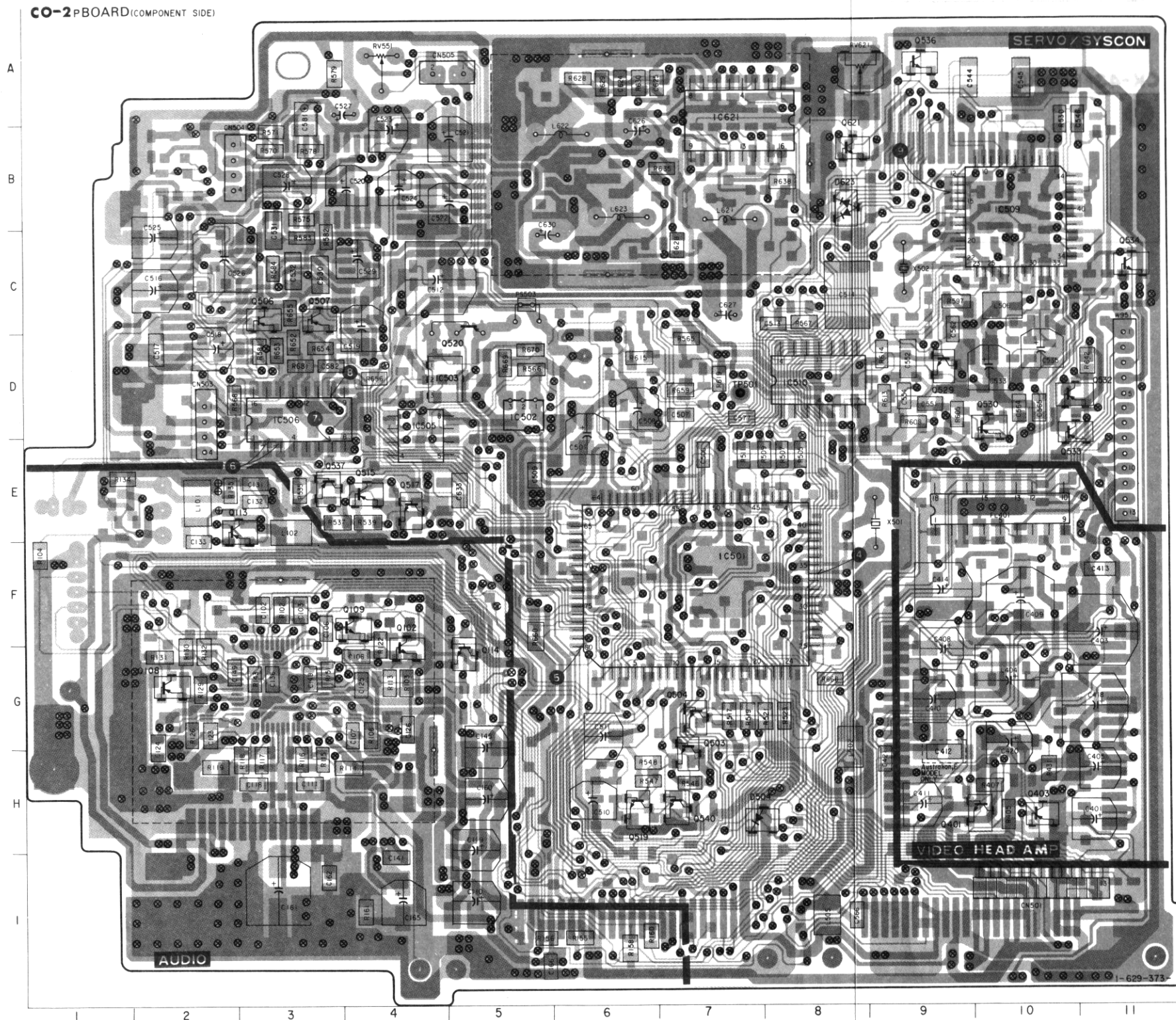


TO
CV-9 BOARD(13/3)
CN802
(See Page 89.)

CK-43P BOARD



- Ref. No. CO-2P, FP-89 BOARDS : 6000 series, CC-51P BOARD : 7000 series, FP-90, KS-11P BOARDS : 8000 series -



DIODE		IC	
D401	8-719-106-09	DIODE RD6.2M-B3	IC101 8-752-033-38
D504	8-719-400-18	DIODE MA152WK	IC401 8-741-150-51
D505	8-719-400-18	DIODE MA152WK	IC501 8-752-811-52
D621	8-719-938-75	DIODE SB05-05CP	IC502 8-759-990-78
D622	8-719-938-75	DIODE SB05-05CP	IC503 8-759-974-21
D623	8-719-104-34	DIODE 1S2835	IC504 8-759-804-72
			IC505 8-759-100-94
			IC506 8-759-107-68
			IC507 8-759-202-45
			IC508 8-759-805-06

IC XA	IC SBX	IC CXP	IC S-8	IC S-8	IC LB1	IC UPC	IC CX2	IC CX2	IC CXA
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SENSOR) PRINTED WIRING BOARDS

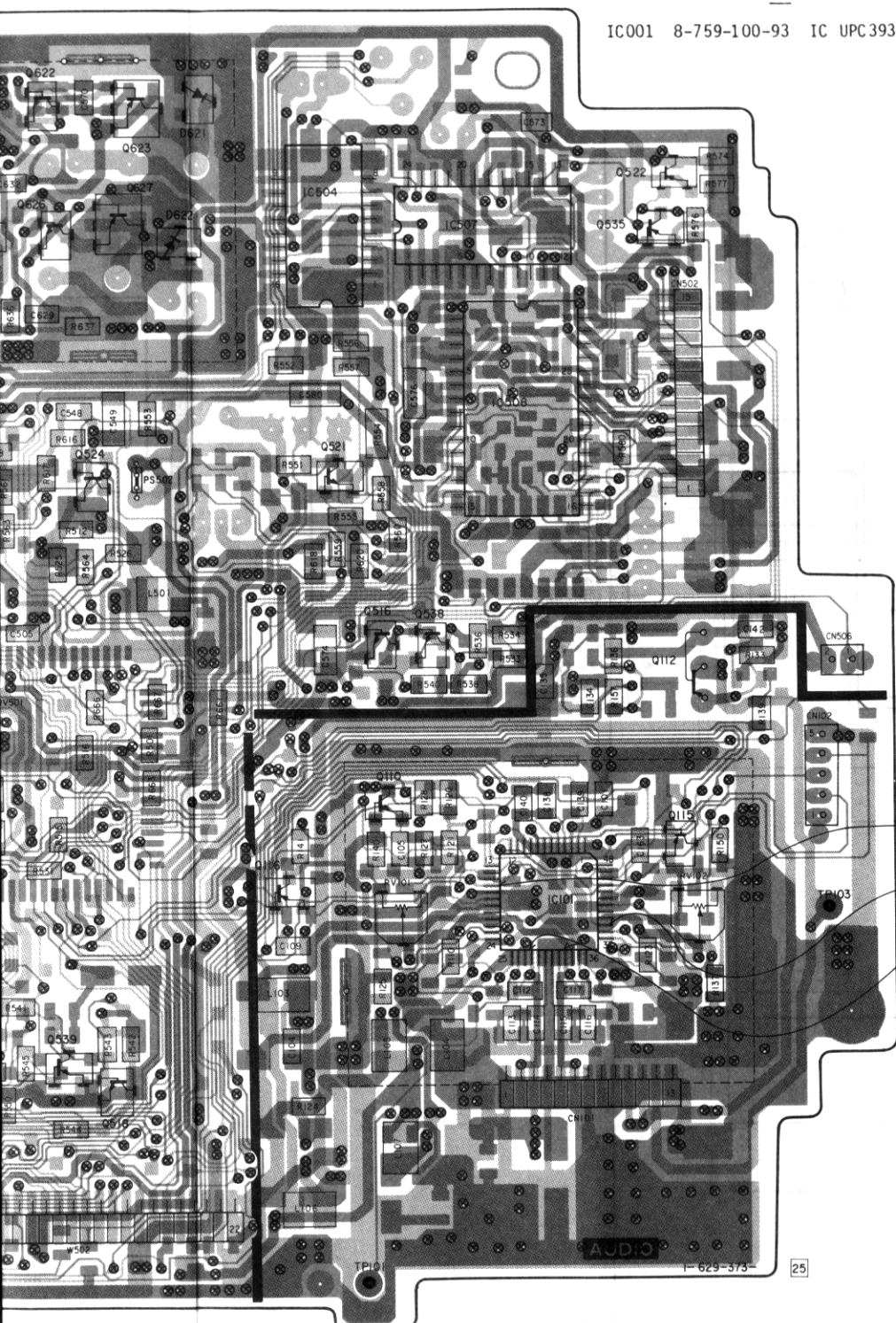
CC-51P BOARD

DIODE

D001	8-719-104-31	DIODE	MA152WK
D002	8-719-104-31	DIODE	MA152WK
D003	8-719-104-31	DIODE	MA152WK

IC

IC001	8-759-100-93	IC	UPC393G2
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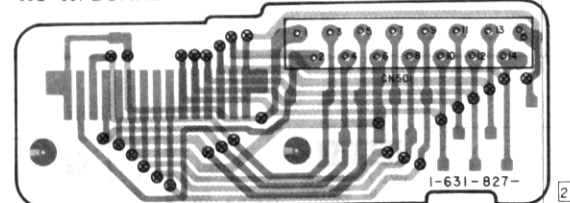


IC			
2M-B3	IC101	8-752-033-38	IC CXA1202R
2WK	IC401	8-741-150-51	IC SBX1505-21
2WK	IC501	8-752-811-52	IC CXP80116-624Q
-05CP	IC502	8-759-990-78	IC S-81350AG-REG
-05CP	IC503	8-759-974-21	IC S-8054ALRS-LN
35	IC504	8-759-804-72	IC LB1631M
	IC505	8-759-100-94	IC UPC358G2
	IC506	8-759-107-68	IC CX20115A
	IC507	8-759-202-45	IC CX20114
	IC508	8-759-805-06	IC CXA1127M
	IC509	8-752-209-53	IC CXA1204Q
	IC510	8-759-100-95	IC UPC324G2
	IC621	8-759-945-17	IC MB3775PF

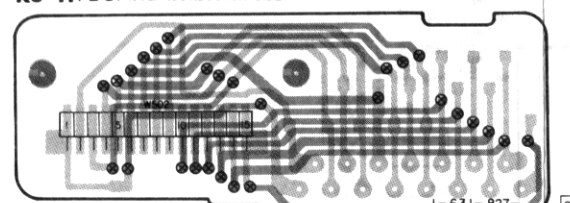
TRANSISTOR

Q002	8-729-903-30	TRANSISTOR	DTC144TK
Q004	8-729-903-30	TRANSISTOR	DTC144TK
Q005	8-729-903-30	TRANSISTOR	DTC144TK
Q006	8-729-900-53	TRANSISTOR	DTC114EK

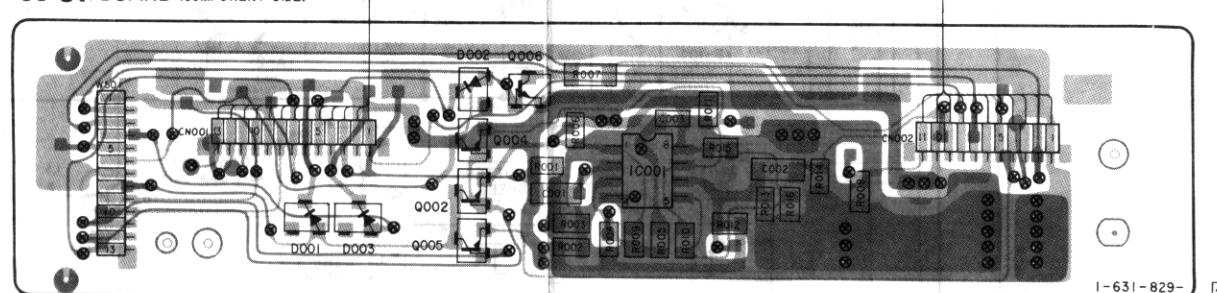
K5-11PBOARD (COMPONENT SIDE)



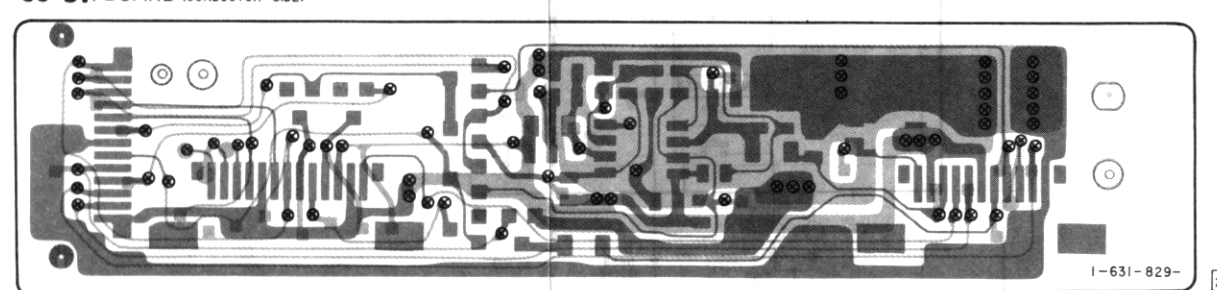
K5-11PBOARD (CONDUCTOR SIDE)



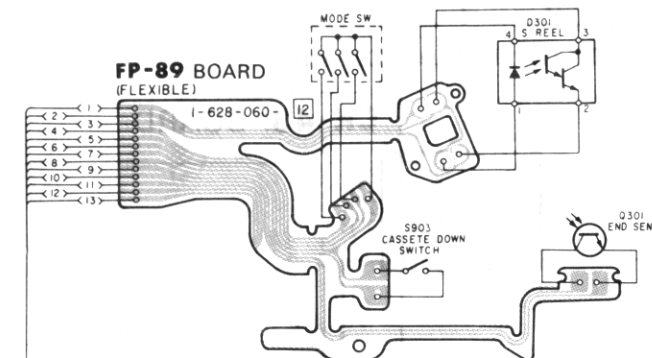
CC-51PBOARD (COMPONENT SIDE)



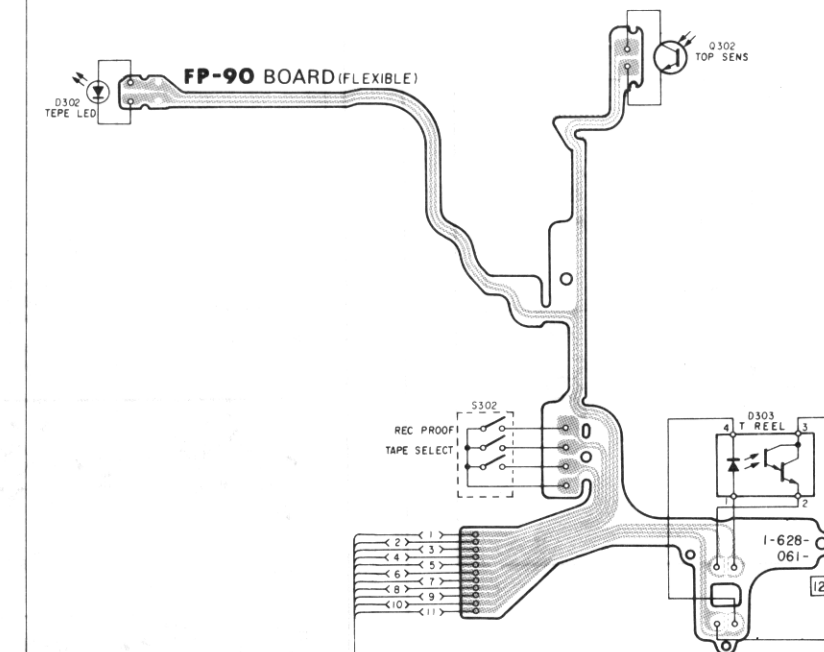
CC-51PBOARD (CONDUCTOR SIDE)



FP-89 BOARD (FLEXIBLE)



FP-90 BOARD (FLEXIBLE)



CO-2P BOARD

TRANSISTOR

Q102	8-729-100-66	TRANSISTOR	2SC1623
Q108	8-729-901-06	TRANSISTOR	DTA144EK
Q109	8-729-100-66	TRANSISTOR	2SC1623
Q110	8-729-100-66	TRANSISTOR	2SC1623
Q112	8-729-119-76	TRANSISTOR	2SA1175-HFE

Q113	8-729-216-22	TRANSISTOR	2SA1162
Q114	8-729-901-01	TRANSISTOR	DTC144EK
Q115	8-729-901-06	TRANSISTOR	DTA144EK
Q116	8-729-901-06	TRANSISTOR	DTA144EK
Q401	8-729-100-66	TRANSISTOR	2SC1623

Q402	8-729-100-66	TRANSISTOR	2SC1623
Q403	8-729-901-06	TRANSISTOR	DTA144EK
Q404	8-729-901-01	TRANSISTOR	DTC144EK
Q405	8-729-901-06	TRANSISTOR	DTA144EK
Q406	8-729-100-66	TRANSISTOR	2SC1623

Q503	8-729-805-39	TRANSISTOR	2SC3898
Q504	8-729-805-39	TRANSISTOR	2SC3898
Q506	8-729-216-22	TRANSISTOR	2SA1162
Q507	8-729-216-22	TRANSISTOR	2SA1162
Q515	8-729-216-22	TRANSISTOR	2SA1162

Q516	8-729-100-66	TRANSISTOR	2SC1623
Q517	8-729-100-66	TRANSISTOR	2SC1623
Q518	8-729-100-66	TRANSISTOR	2SC1623
Q519	8-729-100-66	TRANSISTOR	2SC1623
Q520	8-729-104-95	TRANSISTOR	2SB1040A-5

Q521	8-729-100-66	TRANSISTOR	2SC1623
Q522	8-729-216-22	TRANSISTOR	2SA1162
Q524	8-729-100-66	TRANSISTOR	2SC1623
Q525	8-729-100-66	TRANSISTOR	2SC1623
Q526	8-729-216-22	TRANSISTOR	2SA1162

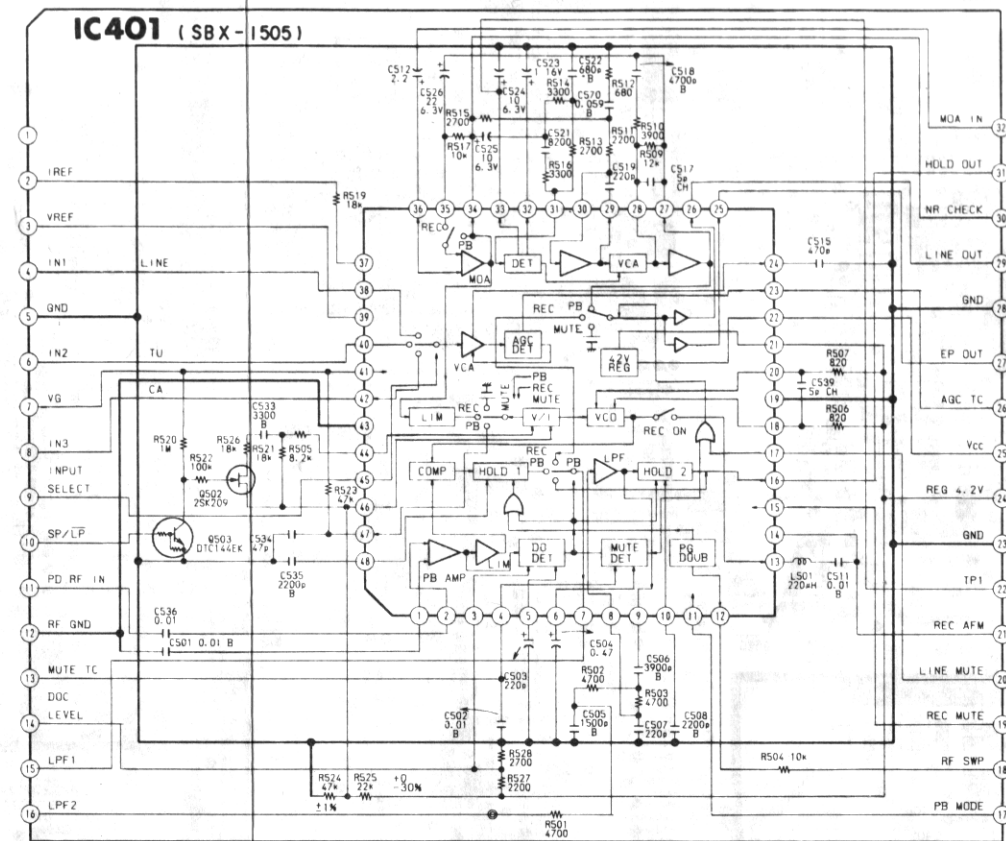
Q527	8-729-100-66	TRANSISTOR	2SC1623
Q528	8-729-216-22	TRANSISTOR	2SA1162
Q529	8-729-100-66	TRANSISTOR	2SC1623
Q530	8-729-216-22	TRANSISTOR	2SA1162
Q531	8-729-216-22	TRANSISTOR	2SA1162

Q532	8-729-216-22	TRANSISTOR	2SA1162
Q533	8-729-216-22	TRANSISTOR	2SA1162
Q534	8-729-901-01	TRANSISTOR	DTC144EK
Q535	8-729-901-01	TRANSISTOR	DTC144EK
Q536	8-729-805-39	TRANSISTOR	2SC3898

Q537	8-729-216-22	TRANSISTOR	2SA1162
Q538	8-729-100-66	TRANSISTOR	2SC1623
Q539	8-729-100-66	TRANSISTOR	2SC1623
Q540	8-729-100-66	TRANSISTOR	2SC1623
Q621	8-729-901-00	TRANSISTOR	DTC124EK

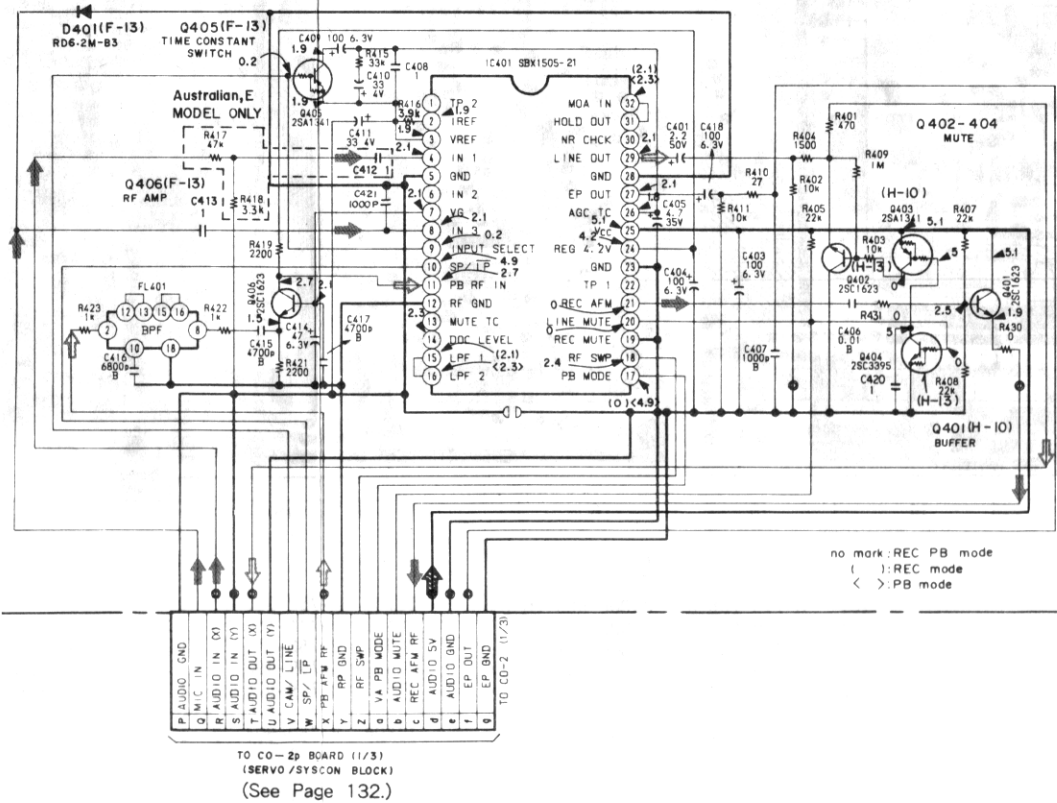
Q622	8-729-100-67	TRANSISTOR	2SC1623-L7
Q623	8-729-805-25	TRANSISTOR	2SB1121
Q624	8-729-901-01	TRANSISTOR	DTC144EK
Q625	8-729-901-04	TRANSISTOR	DTA114EK
Q626	8-729-100-67	TRANSISTOR	2SC1623-L7

Q627	8-729-805-25	TRANSISTOR	2SB1121
Q628	8-729-100-66	TRANSISTOR	2SC1623
Q629	8-729-100-66	TRANSISTOR	2SC1623

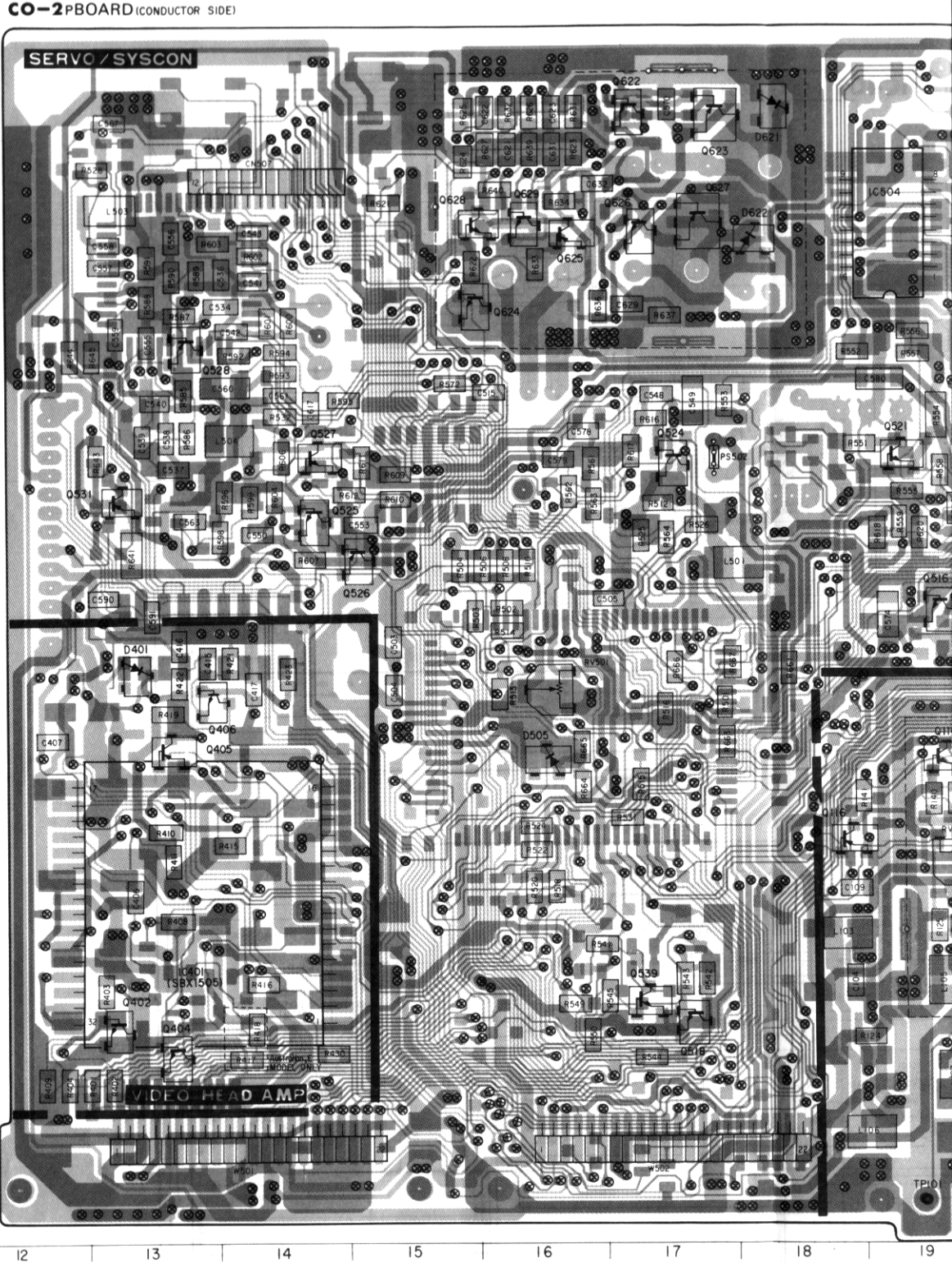
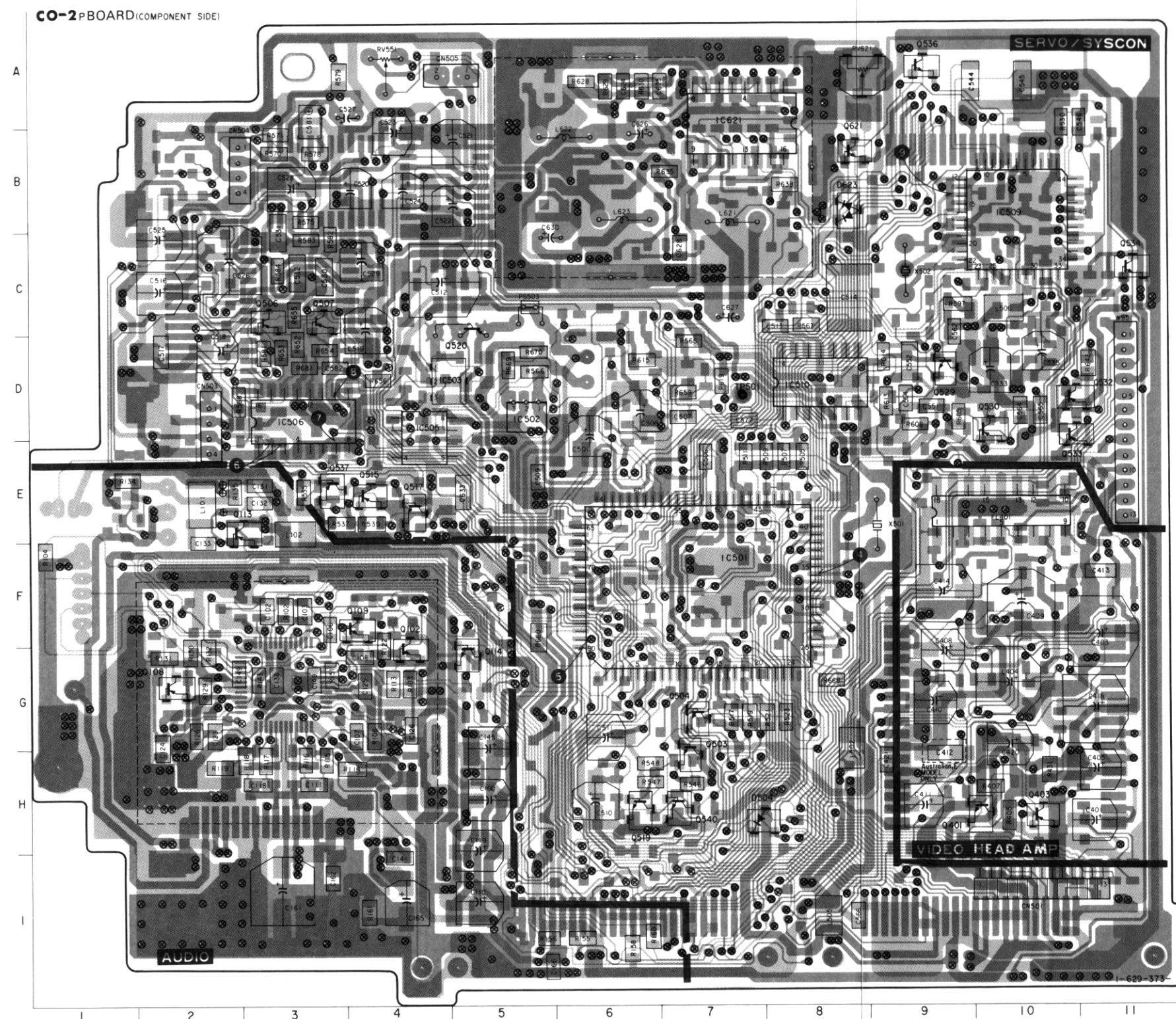


ARD (3/3) AUDIO BLOCK

IC401 (G-13)
 SBX1505-21
 FM MOD/DEMOD
 NOISE REDUCTION



- Ref. No. CO-2P, FP-89 BOARDS : 6000 series, CC-51P BOARD : 7000 series, FP-90, KS-11P BOARDS : 8000 series -



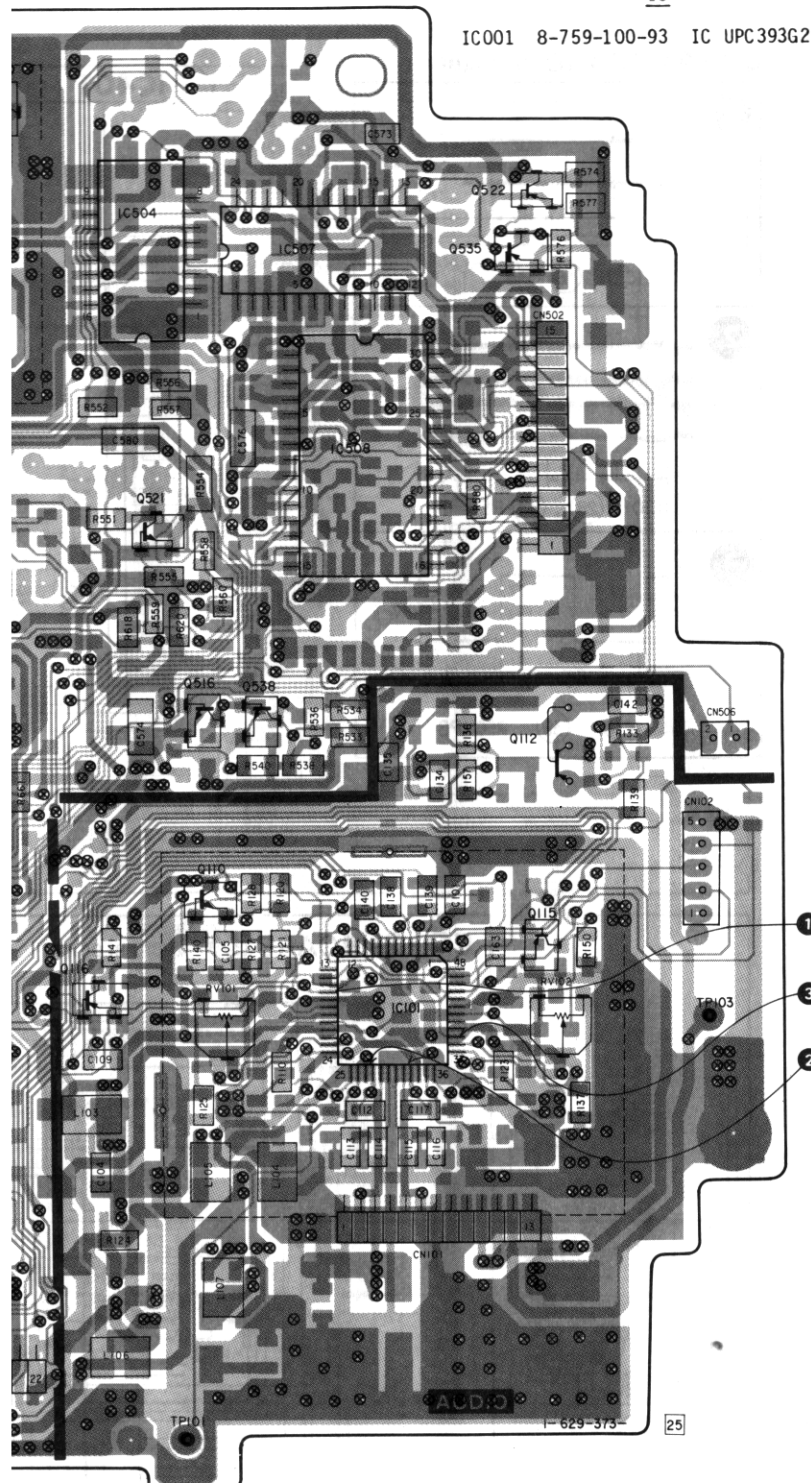
DIODE				IC	
D401	8-719-106-09	DIODE RD6.2M-B3	IC101	8-752-033-38	IC CXA12
D504	8-719-400-18	DIODE MA152WK	IC401	8-741-150-51	IC SBX15
D505	8-719-400-18	DIODE MA152WK	IC501	8-752-811-52	IC CXP80
D621	8-719-938-75	DIODE SB05-05CP	IC502	8-759-990-78	IC S-813
D622	8-719-938-75	DIODE SB05-05CP	IC503	8-759-974-21	IC S-805
D623	8-719-104-34	DIODE 1S2835	IC504	8-759-804-72	IC LB163
			IC505	8-759-100-94	IC UPC35
			IC506	8-759-107-68	IC CX201
			IC507	8-759-202-45	IC CX201
			IC508	8-759-805-06	IC CXA11

WIRING BOARDS

D001	8-719-104-31	DIODE	MA152WK
D002	8-719-104-31	DIODE	MA152WK
D003	8-719-104-31	DIODE	MA152WK

IC

IC001	8-759-100-93	IC	UPC393G2
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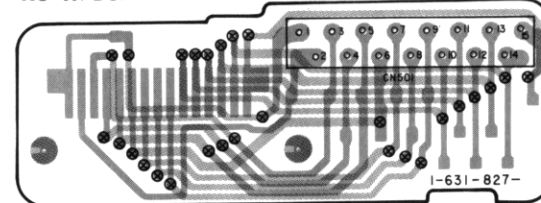


52-033-38	IC	CXA1202R	IC509	8-752-209-53	IC	CXA1204Q
41-150-51	IC	SBX1505-21	IC510	8-759-100-95	IC	UPC324G2
52-811-52	IC	CXP80116-624Q	IC621	8-759-945-17	IC	MB3775PF
59-990-78	IC	S-81350AG-REG				
59-974-21	IC	S-8054ALRS-LN				
59-804-72	IC	LB1631M				
59-100-94	IC	UPC358G2				
59-107-68	IC	CX20115A				
59-202-45	IC	CX20114				
59-805-06	IC	CXA1127M				

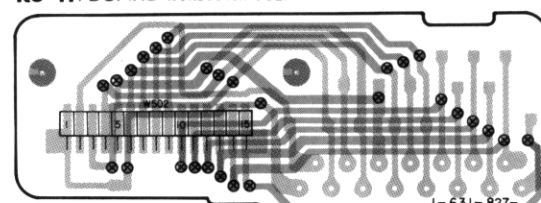
TRANSISTOR

Q002	8-729-903-30	TRANSISTOR	DTC144TK
Q004	8-729-903-30	TRANSISTOR	DTC144TK
Q005	8-729-903-30	TRANSISTOR	DTC144TK
Q006	8-729-900-53	TRANSISTOR	DTC114EK

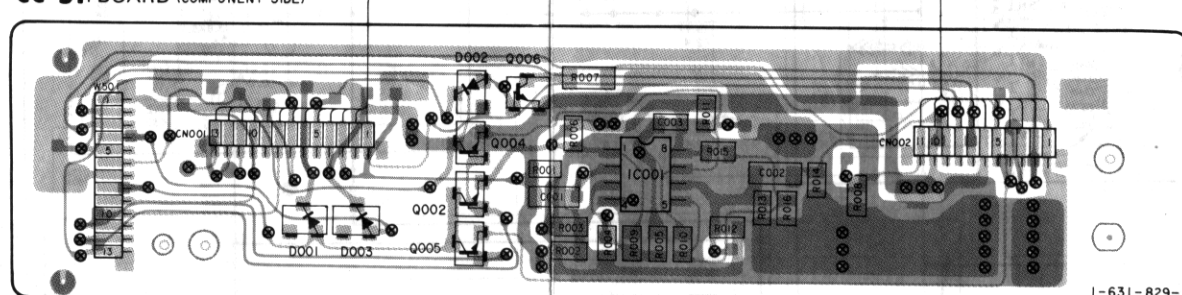
KS-11PBOARD (COMPONENT SIDE)



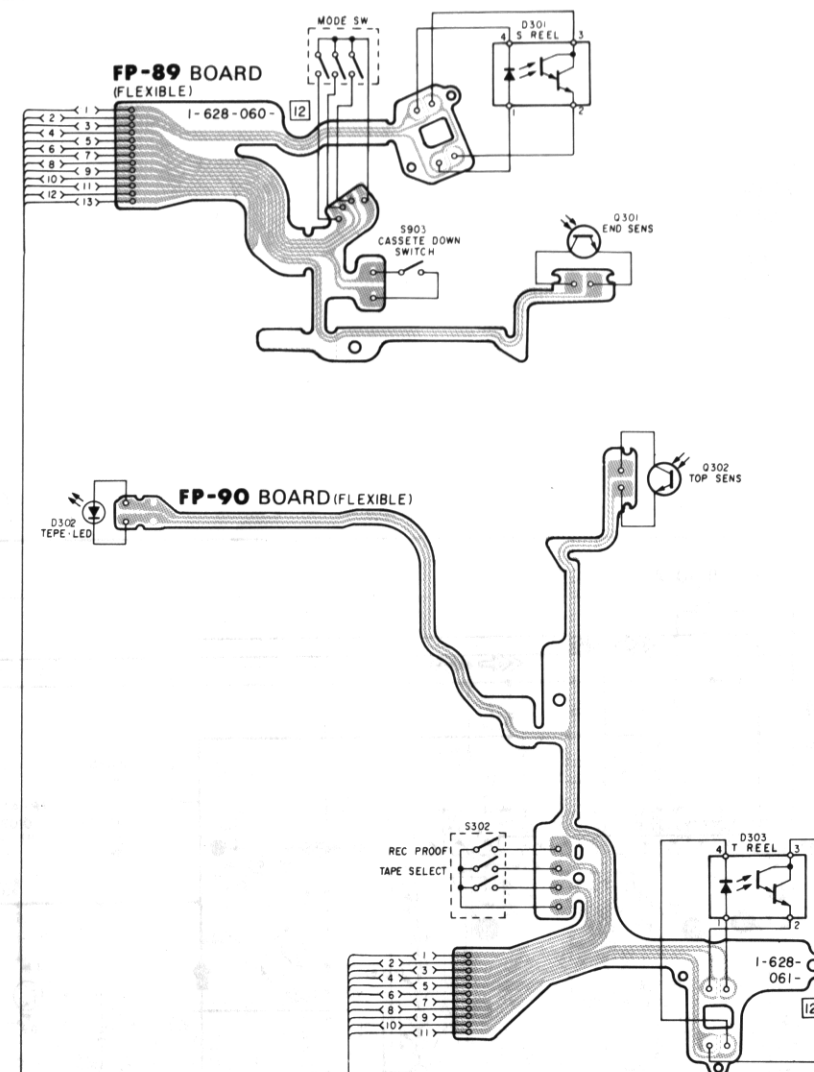
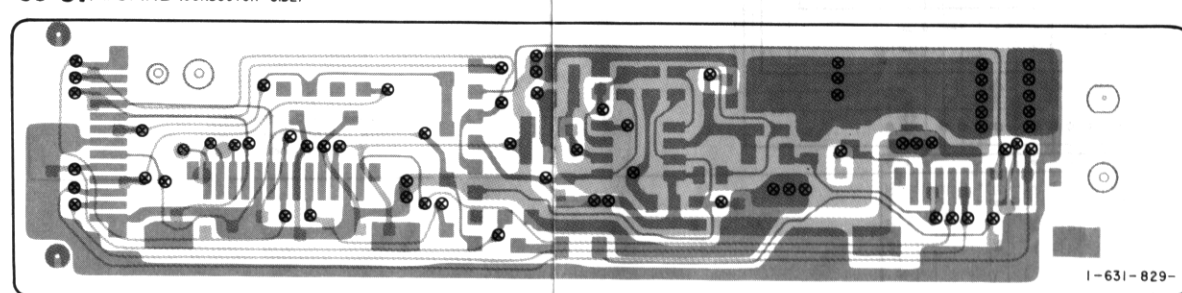
KS-11PBOARD (CONDUCTOR SIDE)



CC-51PBOARD (COMPONENT SIDE)



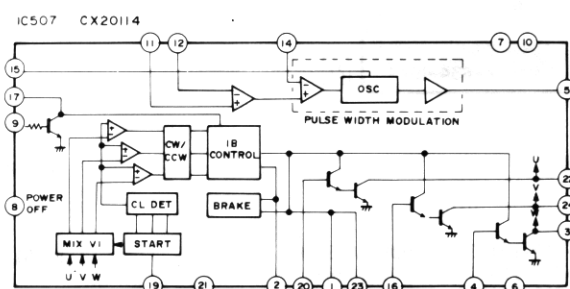
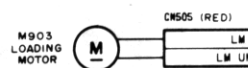
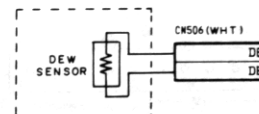
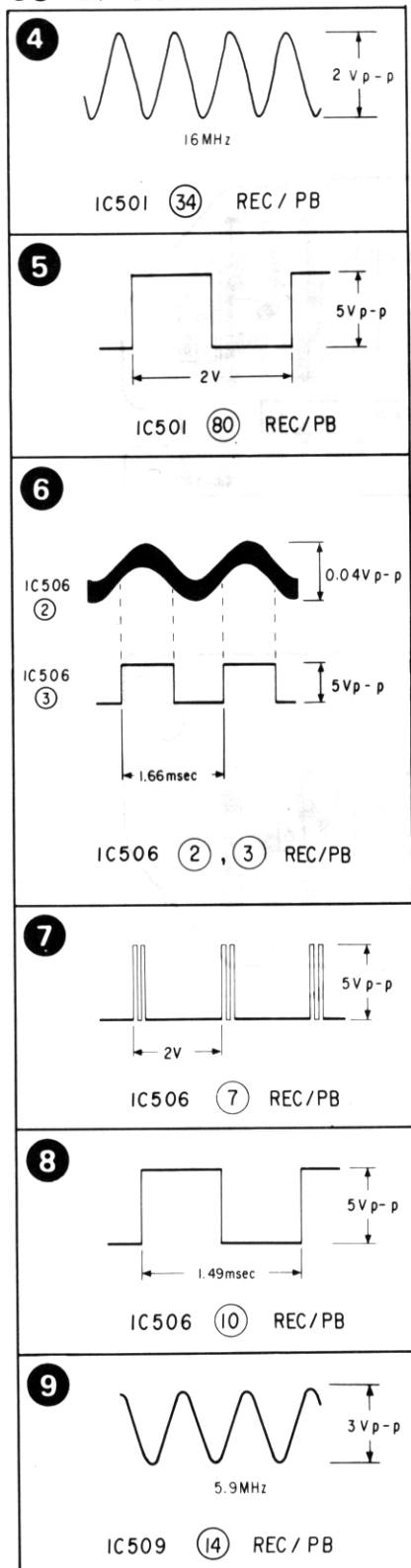
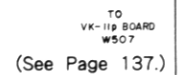
CC-51PBOARD (CONDUCTOR SIDE)



CO-2P BOARD

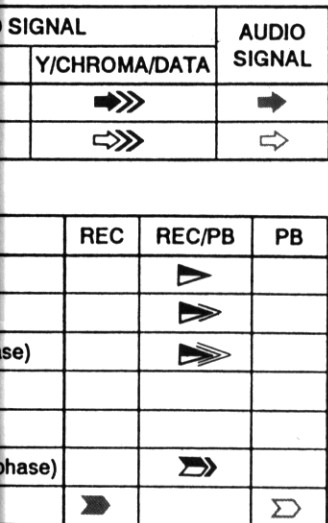
TRANSISTOR

Q102	8-729-100-66	TRANSISTOR	2SC1623
Q108	8-729-901-06	TRANSISTOR	DTA144EK
Q109	8-729-100-66	TRANSISTOR	2SC1623
Q110	8-729-100-66	TRANSISTOR	2SC1623
Q112	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q113	8-729-216-22	TRANSISTOR	2SA1162
Q114	8-729-901-01	TRANSISTOR	DTC144EK
Q115	8-729-901-06	TRANSISTOR	DTA144EK
Q116	8-729-901-06	TRANSISTOR	DTA144EK
Q401	8-729-100-66	TRANSISTOR	2SC1623
Q402	8-729-100-66	TRANSISTOR	2SC1623
Q403	8-729-901-06	TRANSISTOR	DTA144EK
Q404	8-729-901-01	TRANSISTOR	DTC144EK
Q405	8-729-901-06	TRANSISTOR	DTA144EK
Q406	8-729-100-66	TRANSISTOR	2SC1623
Q503	8-729-805-39	TRANSISTOR	2SC3898
Q504	8-729-805-39	TRANSISTOR	2SC3898
Q506	8-729-216-22	TRANSISTOR	2SA1162
Q507	8-729-216-22	TRANSISTOR	2SA1162
Q515	8-729-216-22	TRANSISTOR	2SA1162
Q516	8-729-100-66	TRANSISTOR	2SC1623
Q517	8-729-100-66	TRANSISTOR	2SC1623
Q518	8-729-100-66	TRANSISTOR	2SC1623
Q519	8-729-100-66	TRANSISTOR	2SC1623
Q520	8-729-104-95	TRANSISTOR	2SB1040A-5
Q521	8-729-100-66	TRANSISTOR	2SC1623
Q522	8-729-216-22	TRANSISTOR	2SA1162
Q524	8-729-100-66	TRANSISTOR	2SC1623
Q525	8-729-100-66	TRANSISTOR	2SC1623
Q526	8-729-216-22	TRANSISTOR	2SA1162
Q527	8-729-100-66	TRANSISTOR	2SC1623
Q528	8-729-216-22	TRANSISTOR	2SA1162
Q529	8-729-100-66	TRANSISTOR	2SC1623
Q530	8-729-216-22	TRANSISTOR	2SA1162
Q531	8-729-216-22	TRANSISTOR	2SA1162
Q532	8-729-216-22	TRANSISTOR	2SA1162
Q533	8-729-216-22	TRANSISTOR	2SA1162
Q534	8-729-901-01	TRANSISTOR	DTC144EK
Q535	8-729-901-01	TRANSISTOR	DTC144EK
Q536	8-729-805-39	TRANSISTOR	2SC3898
Q537	8-729-216-22	TRANSISTOR	2SA1162
Q538	8-729-100-66	TRANSISTOR	2SC1623
Q539	8-729-100-66	TRANSISTOR	2SC1623
Q540	8-729-100-66	TRANSISTOR	2SC1623
Q621	8-729-901-00	TRANSISTOR	DTC124EK
Q622	8-729-100-67	TRANSISTOR	2SC1623-L7
Q623	8-729-805-25	TRANSISTOR	2SB1121
Q624	8-729-901-01	TRANSISTOR	DTC144EK
Q625	8-729-901-04	TRANSISTOR	DTA114EK
Q626	8-729-100-67	TRANSISTOR	2SC1623-L7
Q627	8-729-805-25	TRANSISTOR	2SB1121
Q628	8-729-100-66	TRANSISTOR	2SC1623
Q629	8-729-100-66	TRANSISTOR	2SC1623



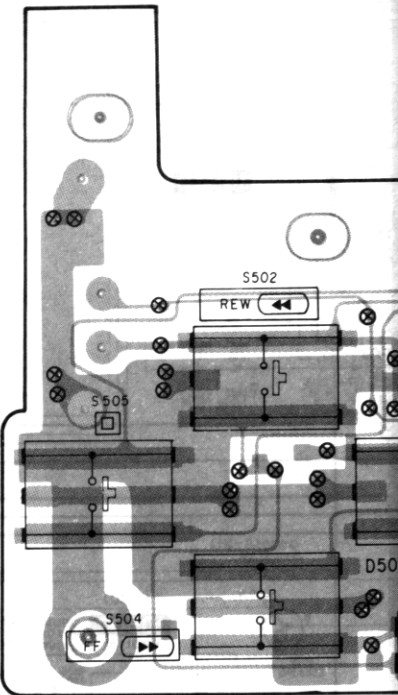
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡		➡➡➡	➡
PB			➡➡➡	➡

	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal			

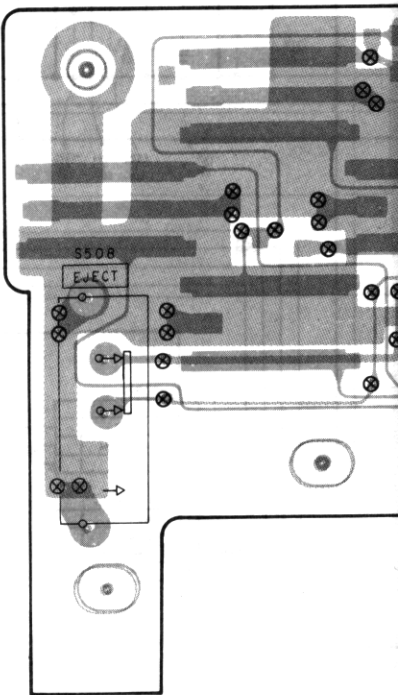


MA-66P (MIC AMP), RC-40P (START/STOP SW)
VK-11P (VIDEO FUNCTION SWITCH) PRINTED WIRING BOARD
- Ref. No. MA-66P, VK-11P BOARDS : 9000 series, RC-40P BOARD

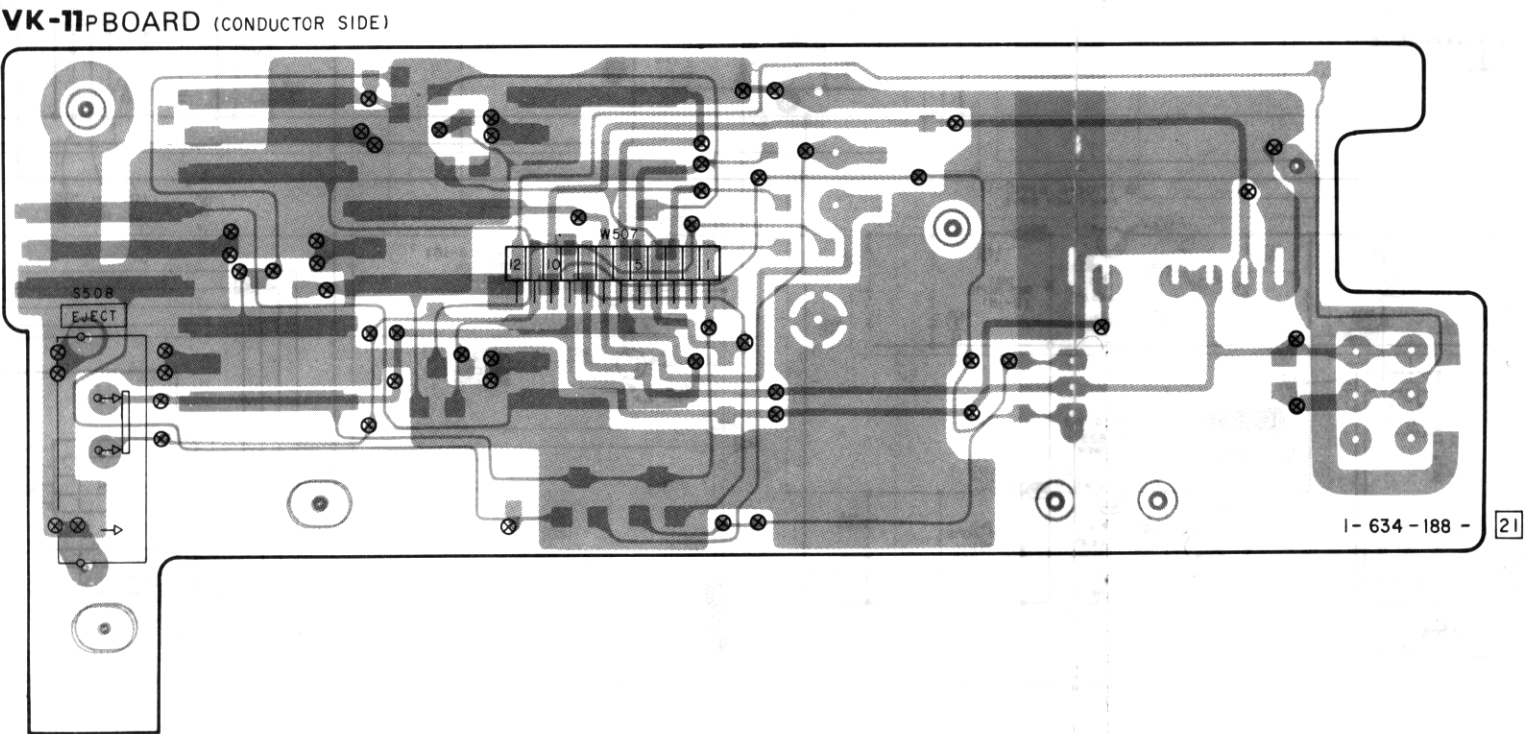
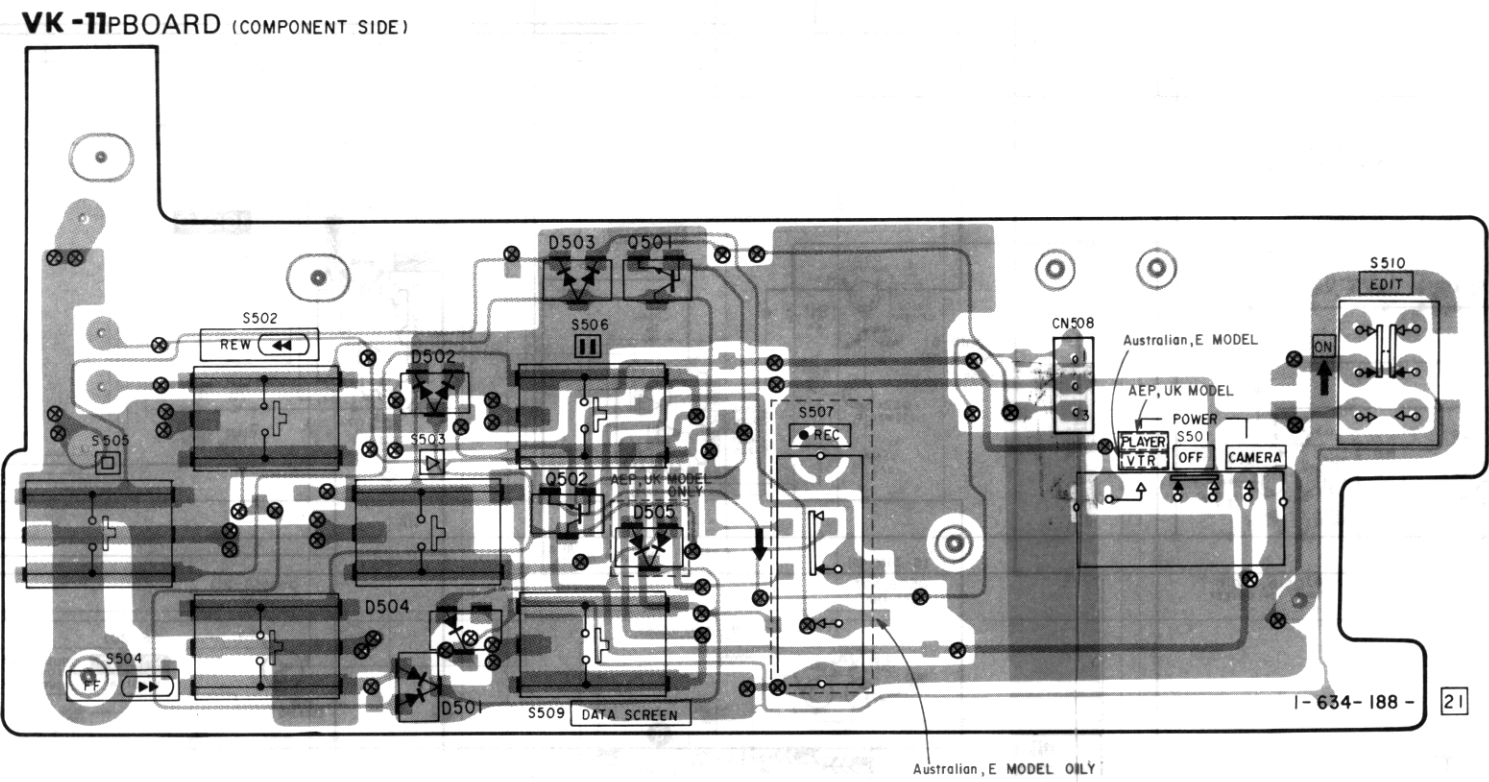
VK-11PBOARD (COMPONENT SIDE)

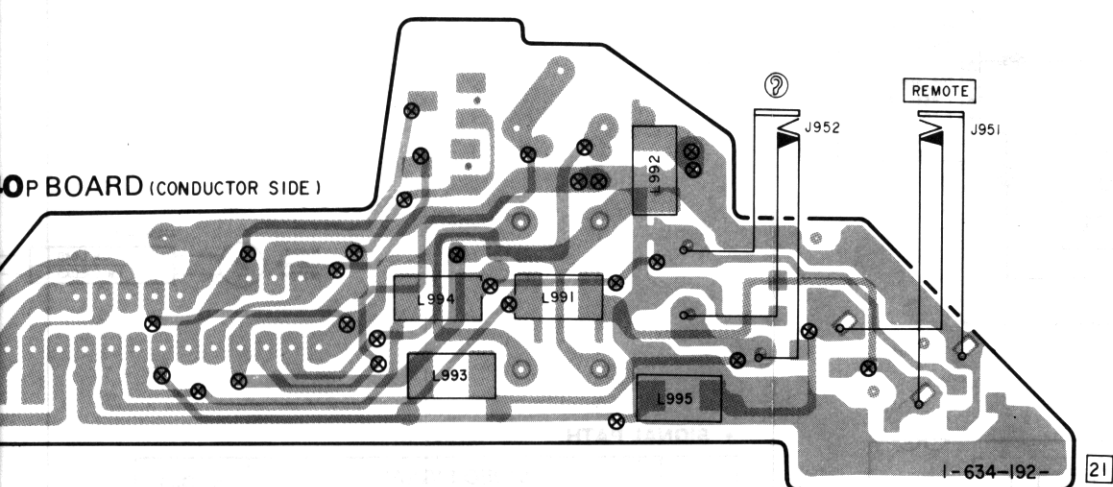
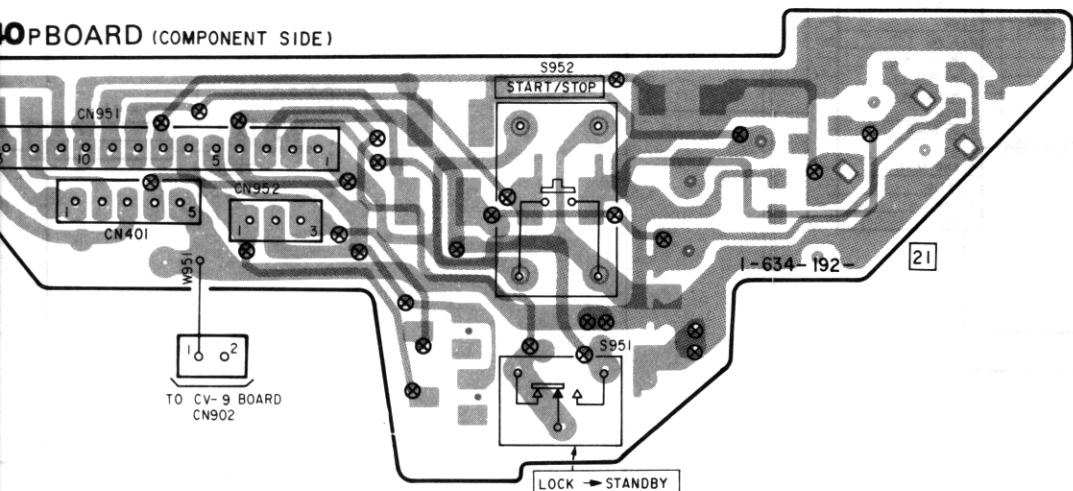


VK-11PBOARD (CONDUCTOR SIDE)



MA-66P (MIC AMP), RC-40P (START/STOP SWITCH),
 VK-11P (VIDEO FUNCTION SWITCH) PRINTED WIRING BOARDS
 - Ref. No. MA-66P, VK-11P BOARDS : 9000 series, RC-40P BOARD : 10000 series -





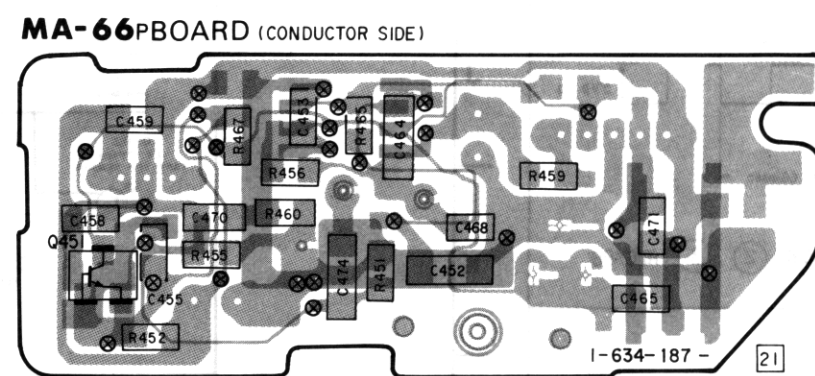
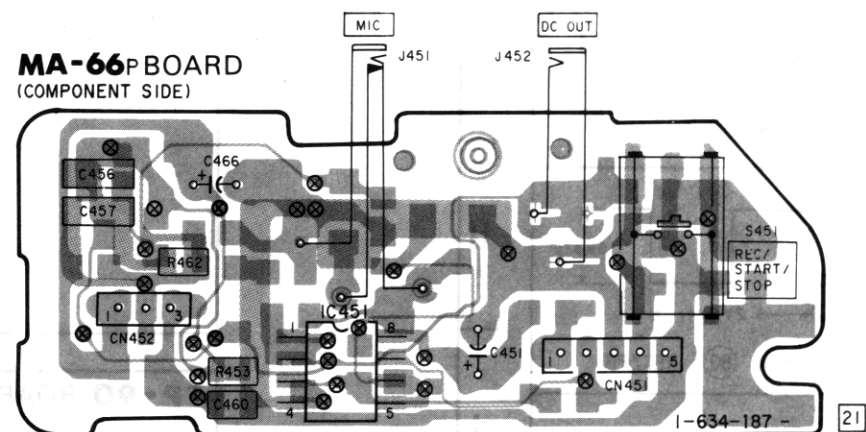
VK-11P BOARD

DIODE

D501	8-719-104-31	DIODE	MA152WK
D502	8-719-104-34	DIODE	1S2836
D503	8-719-104-34	DIODE	1S2836
D504	8-719-801-41	DIODE	1SS196
D505	8-719-104-31	DIODE	MA152WK (AEP/E MODEL)

TRANSISTOR

Q501	8-729-903-30	TRANSISTOR	DTC144TK
Q502	8-729-903-30	TRANSISTOR	DTC144TK



MA-66P BOARD

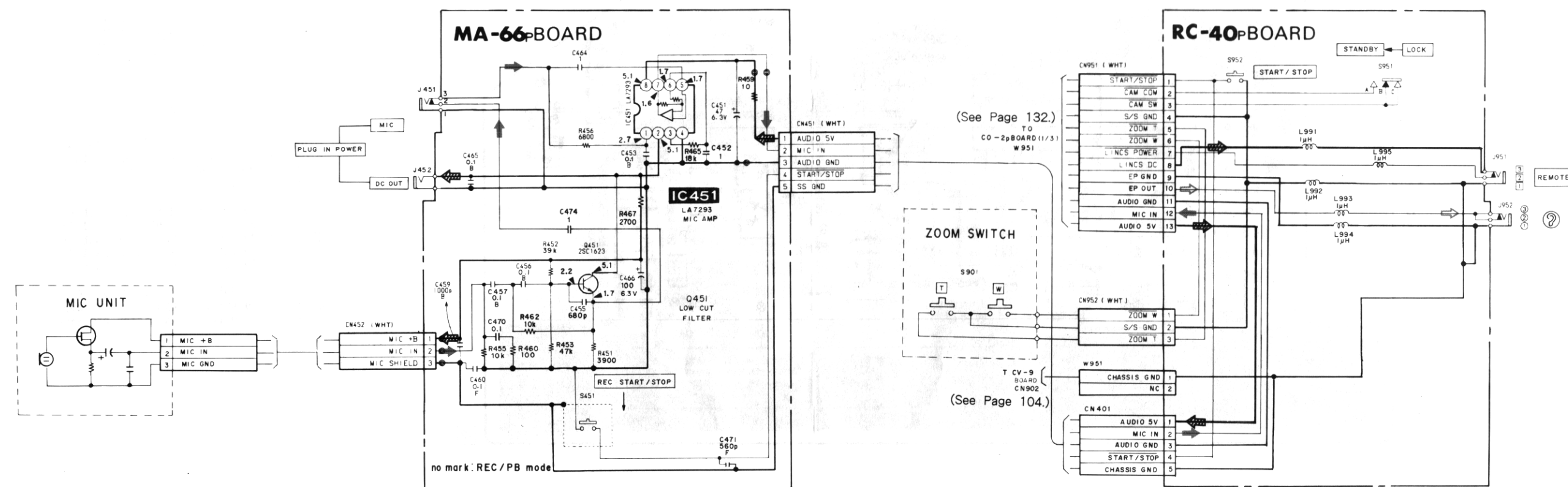
IC

IC451	8-759-822-37	IC	LA7293M-TE-L
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TRANSISTOR

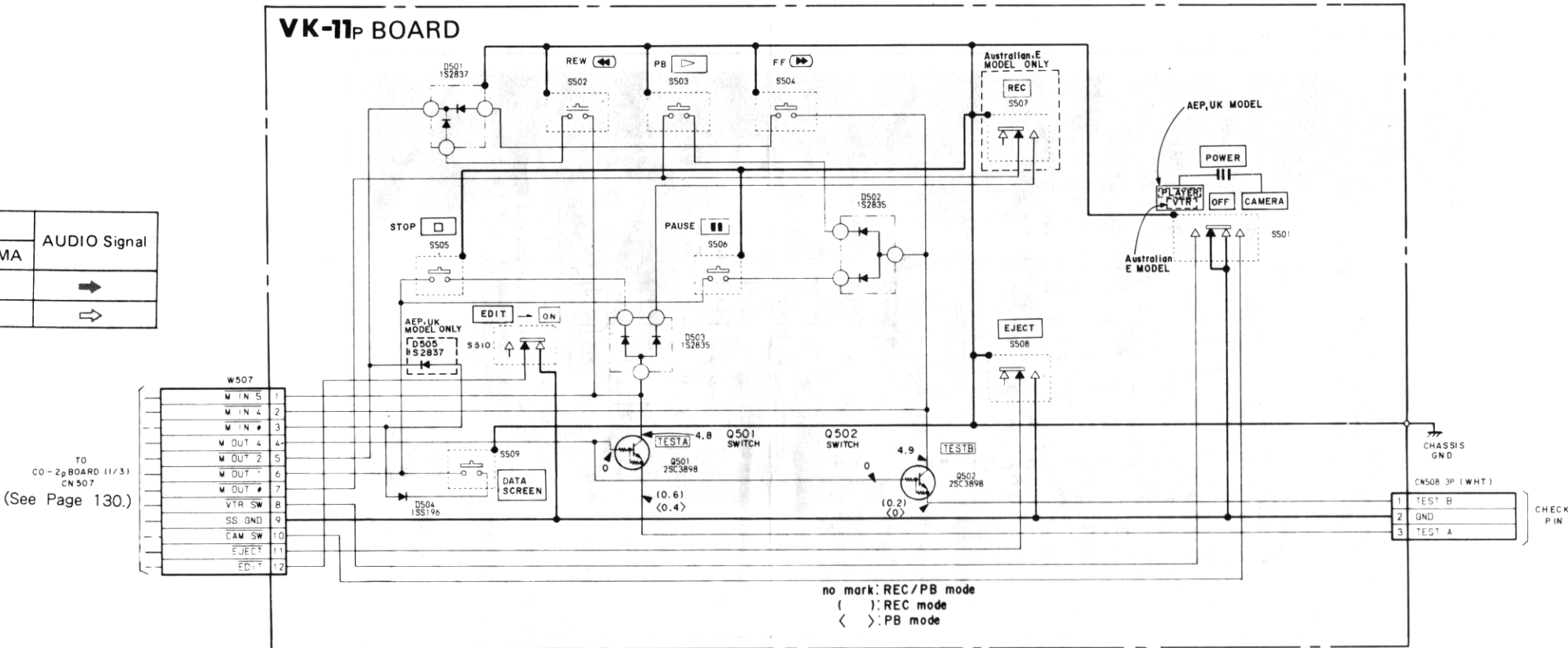
Q451	8-729-100-66	TRANSISTOR	2SC1623
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- Ref. No. MA-66P, VK-11P BOARDS : 9000 series, RC-40P BOARD : 10000 series -



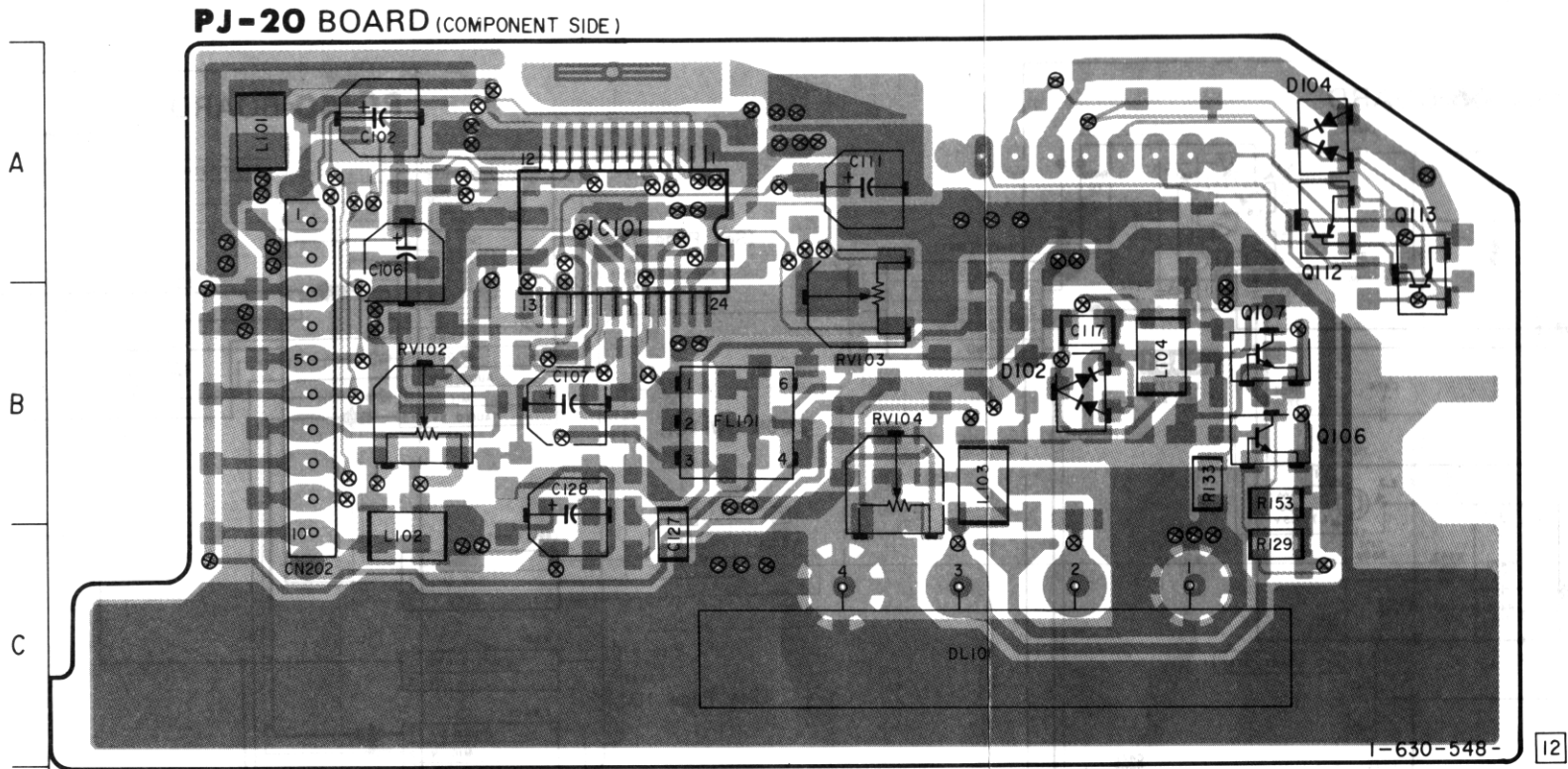
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC				→
PB				→



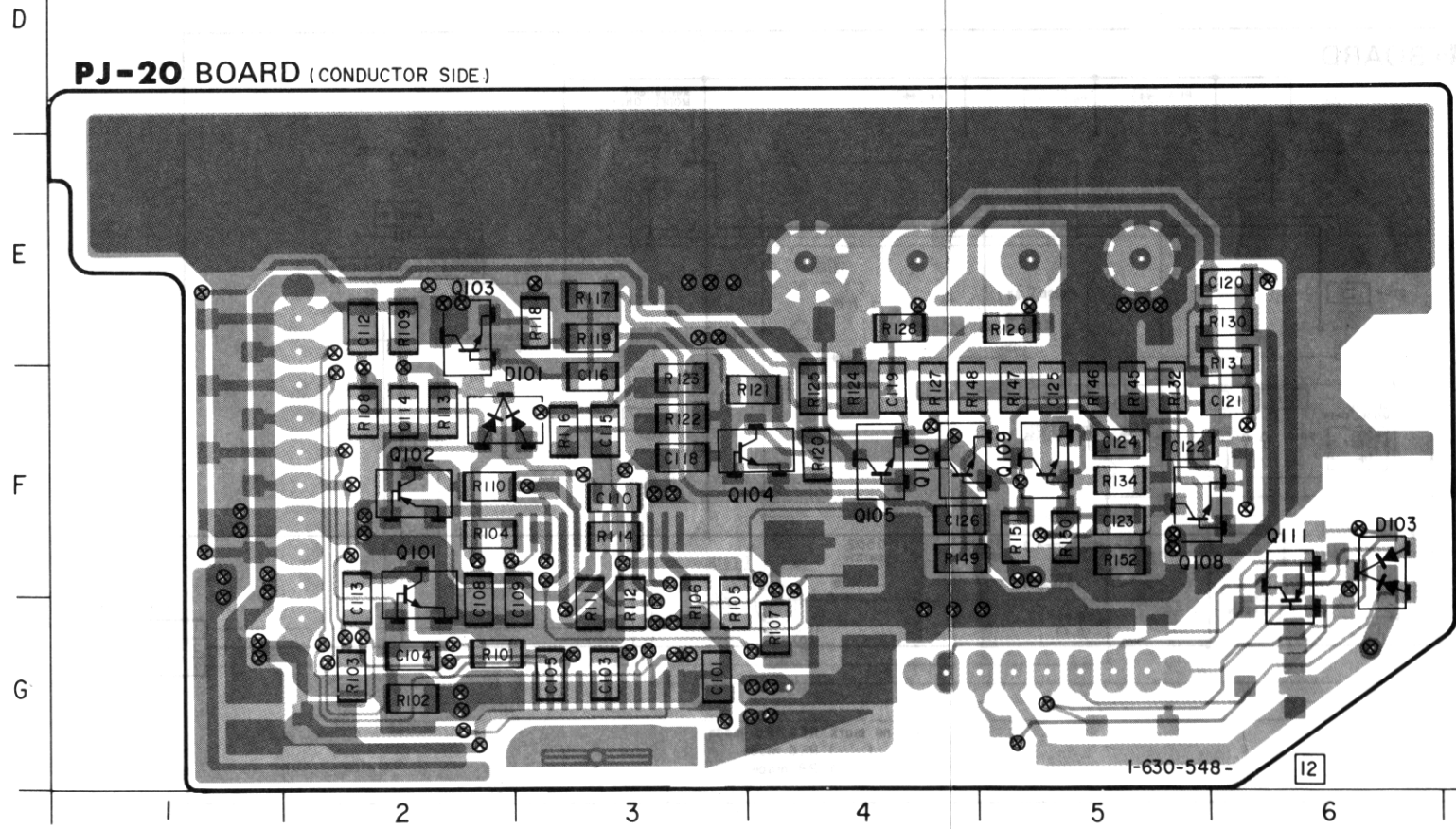
PJ-20 (JOG CHROMA PROCESS) PRINTED WIRING BOARD

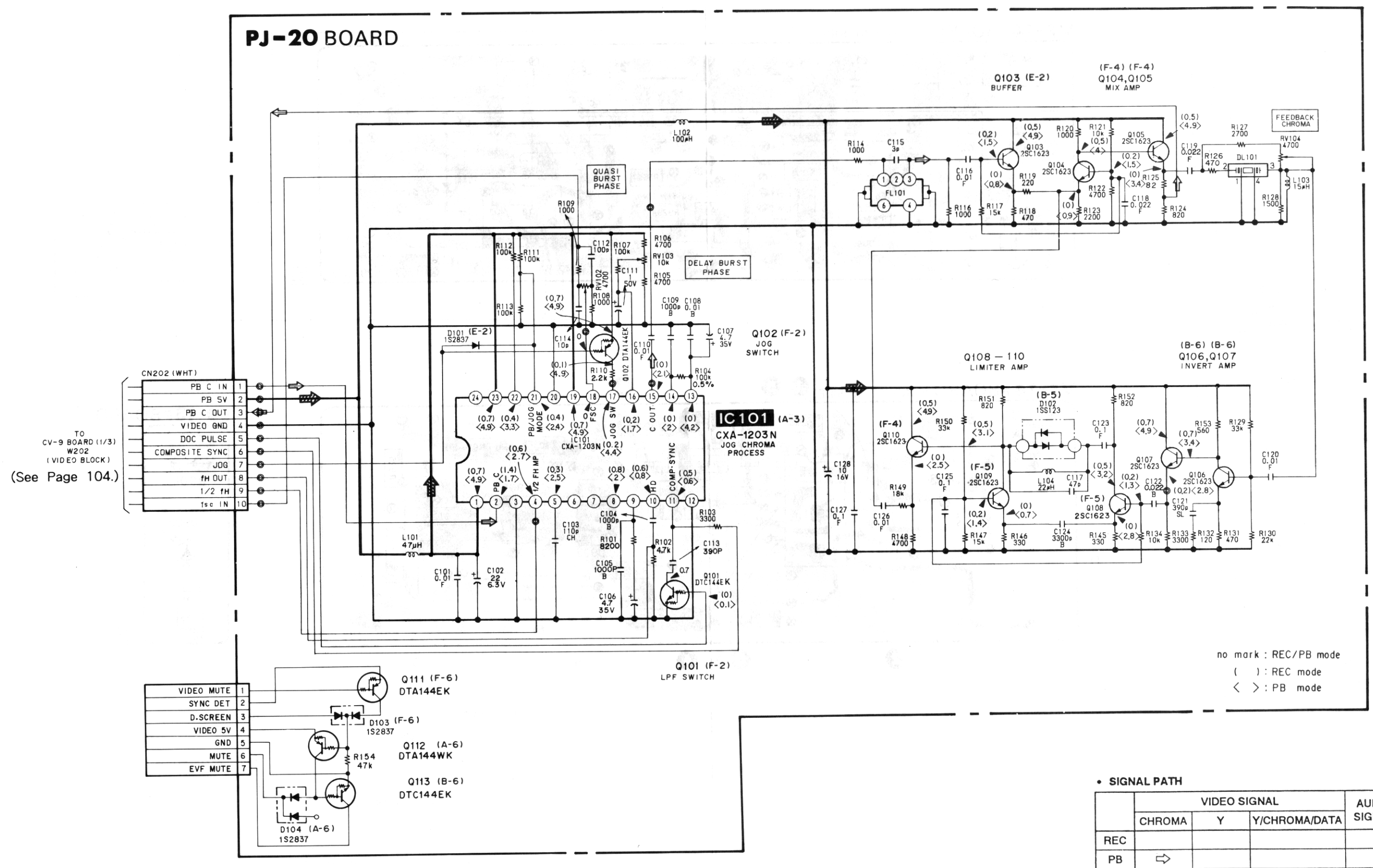
— Ref. No. PJ-20 BOARD: 4000 series —



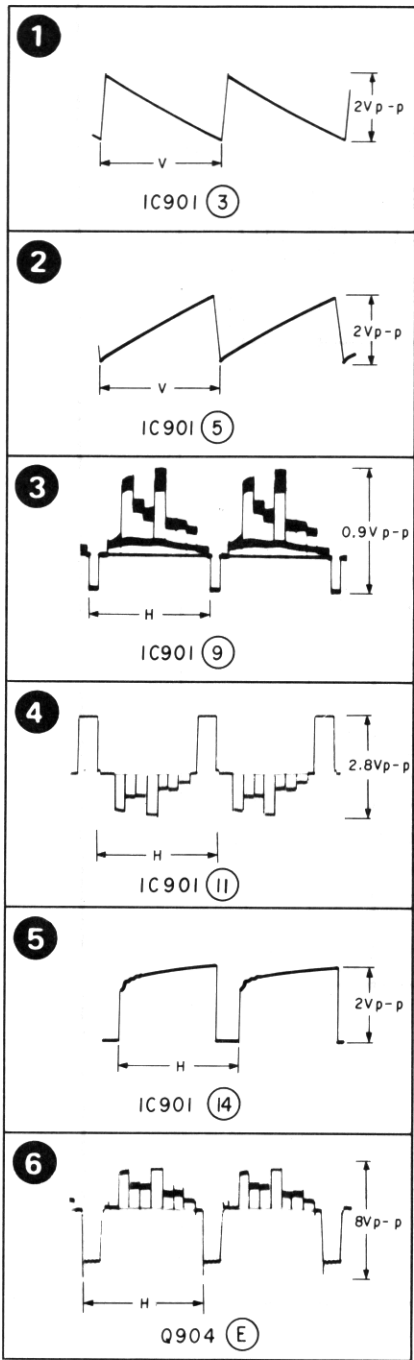
DIODE			
D101	8-719-104-31	DIODE	MA152WK
D102	8-719-800-76	DIODE	1SS226
D103	8-719-104-31	DIODE	MA152WK
D104	8-719-104-31	DIODE	MA152WK

TRANSISTOR			
Q101	8-729-901-01	TRANSISTOR	DTC144EK
Q102	8-729-901-06	TRANSISTOR	DTA144EK
Q103	8-729-100-66	TRANSISTOR	2SC1623
Q104	8-729-100-66	TRANSISTOR	2SC1623
Q105	8-729-100-66	TRANSISTOR	2SC1623
Q106	8-729-100-66	TRANSISTOR	2SC1623
Q107	8-729-100-66	TRANSISTOR	2SC1623
Q108	8-729-100-66	TRANSISTOR	2SC1623
Q109	8-729-100-66	TRANSISTOR	2SC1623
Q110	8-729-100-66	TRANSISTOR	2SC1623
Q111	8-729-901-06	TRANSISTOR	DTA144EK
Q112	8-729-901-13	TRANSISTOR	DTA144WK
Q113	8-729-901-01	TRANSISTOR	DTC144EK

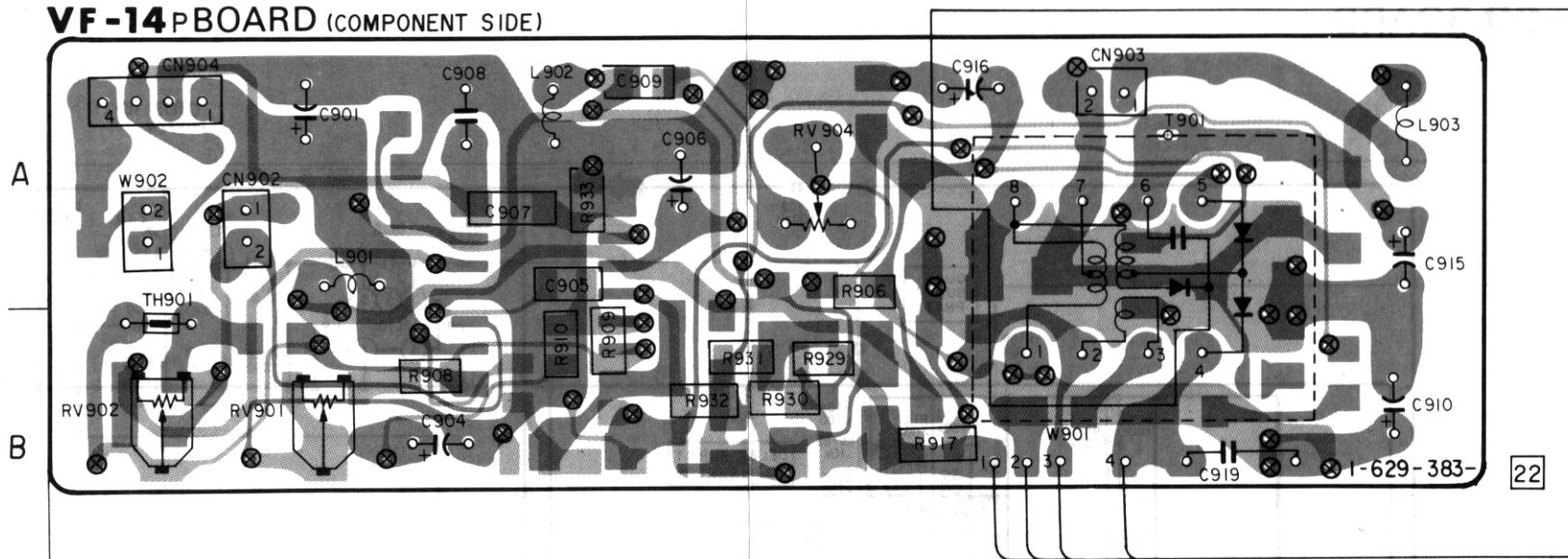




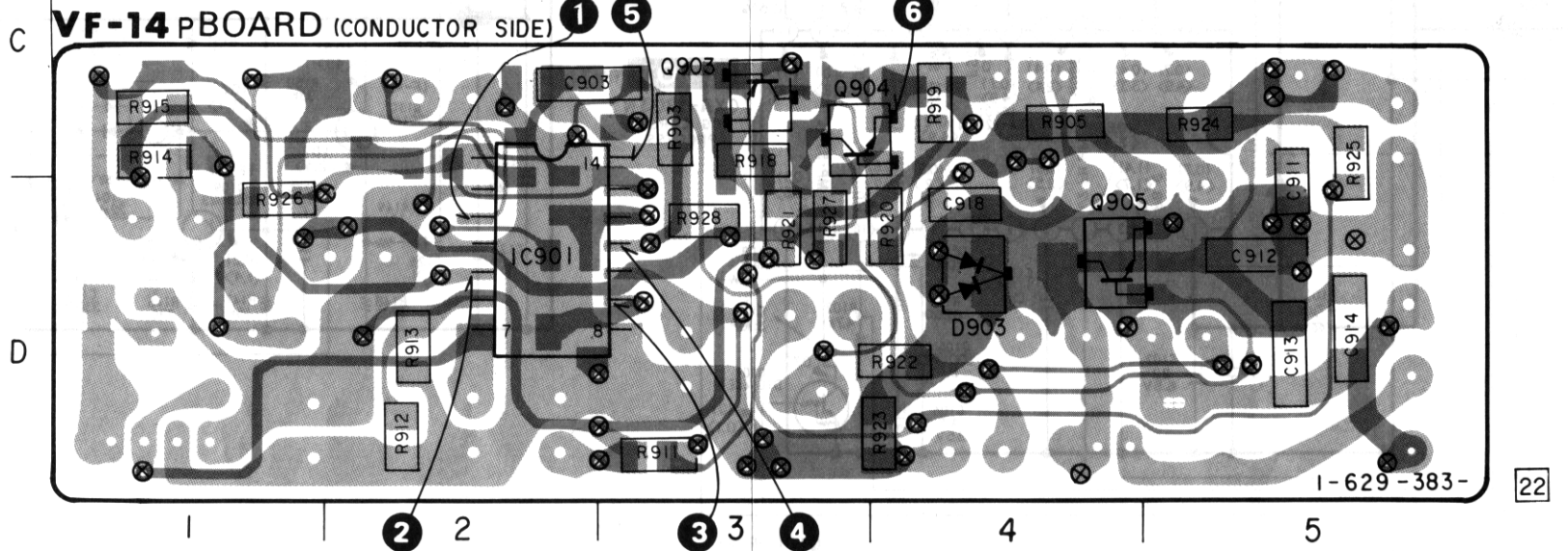
VF-14P BOARD



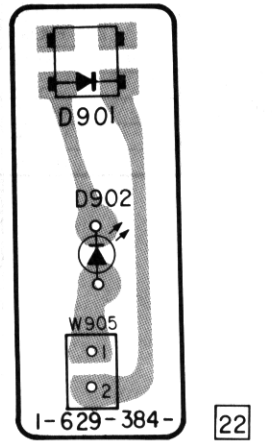
VF-14P BOARD (COMPONENT SIDE)



VF-14P BOARD (CONDUCTOR SIDE)



LD-13P BOARD



VF-14P BOARD

DIODE

D903 8-719-400-20 DIODE MA152WA

IC

IC901 8-759-420-01 IC AN2512S

TRANSISTOR

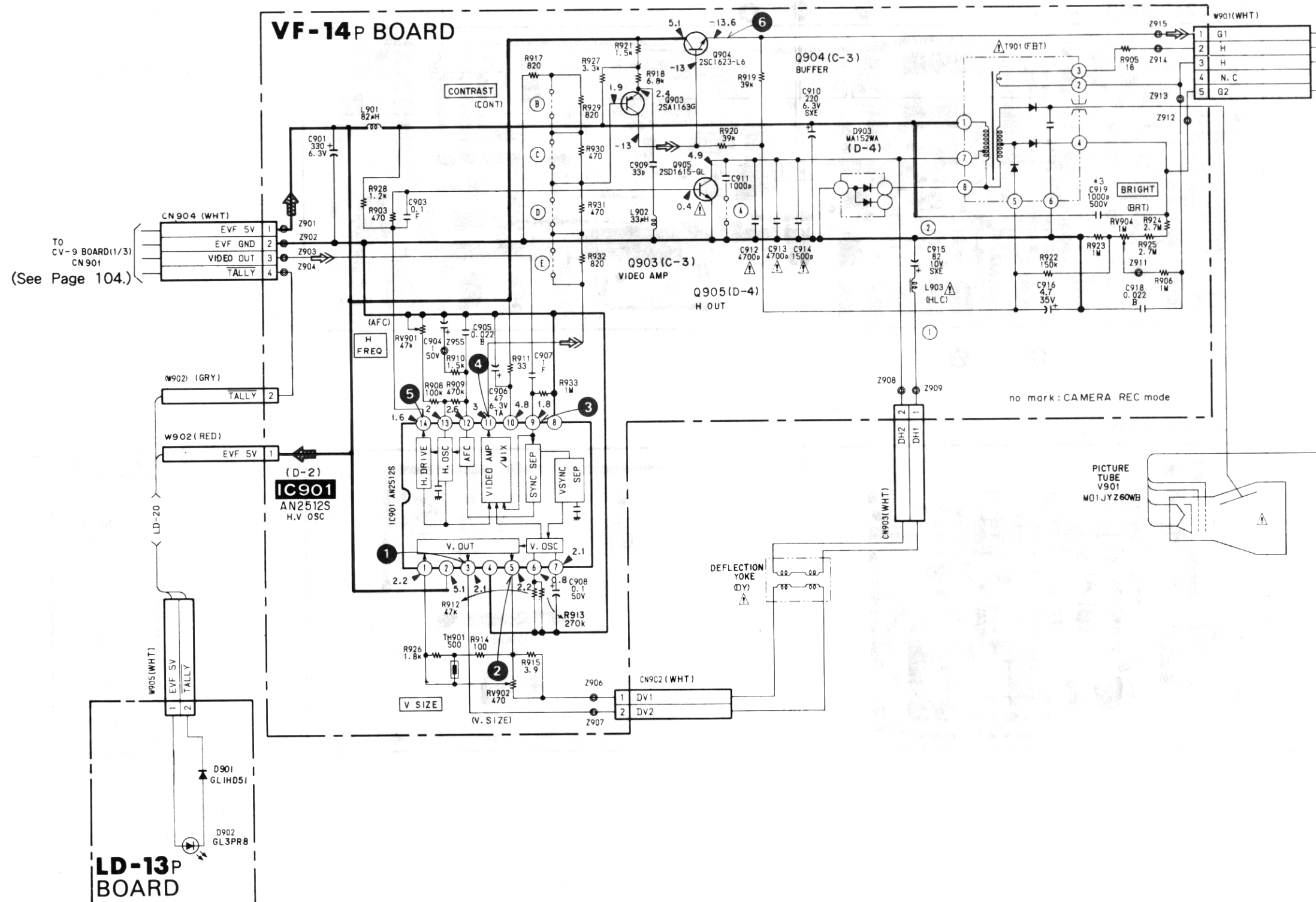
Q903 8-729-216-31 TRANSISTOR 2SA1163G
Q904 8-729-100-66 TRANSISTOR 2SC1623
Q905 8-729-106-68 TRANSISTOR 2SD1615A-GP

LD-13P BOARD

DIODE

D901 8-719-941-34 DIODE GL1HD51-TE84L

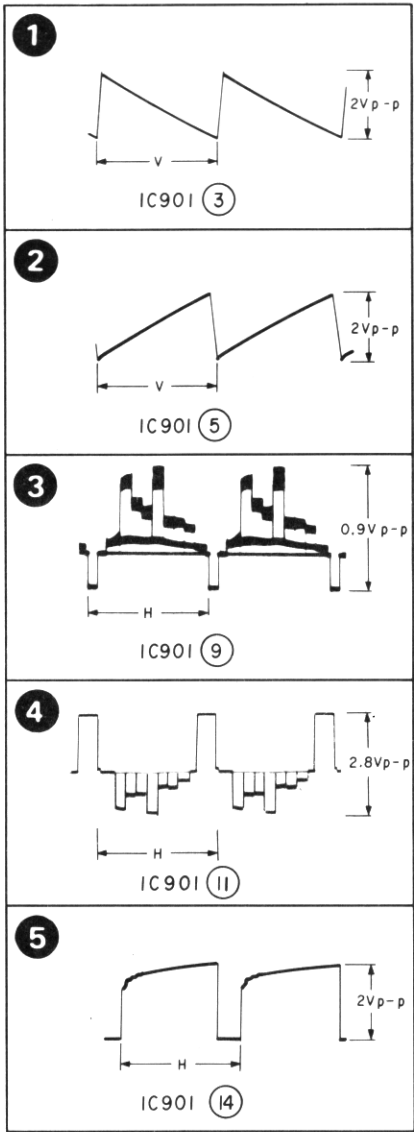
— Ref. No. VF-14P BOARD: 7000 series, LD-13P BOARD: 8000 series —



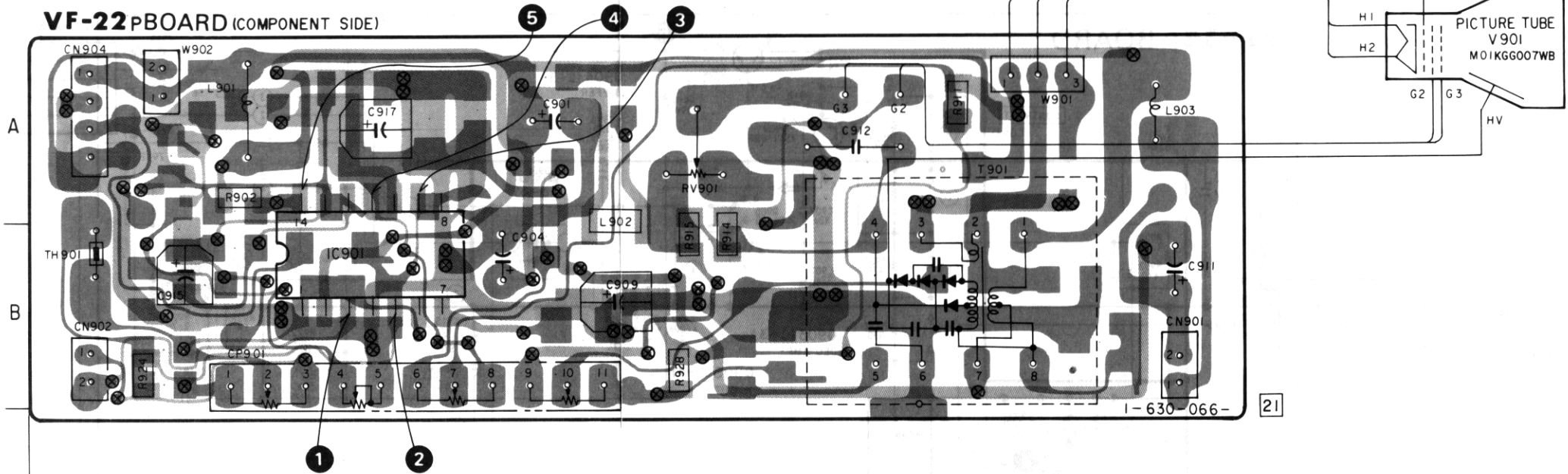
VF-22P (ELECTRONIC VIEW FIDER), LD-17P (TALLY LED) PRINTED WIRING BOARDS

— Ref. No. VF-22P BOARD: 4000 series, LD-17P BOARD: 5000 series —

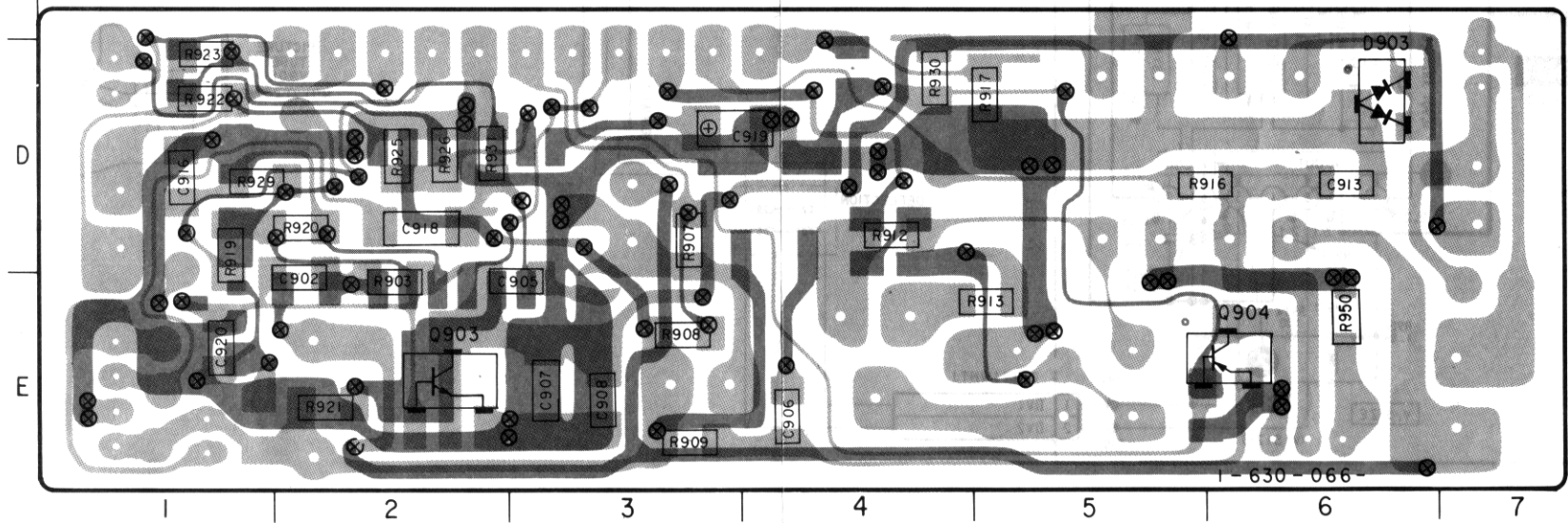
VF-22P BOARD



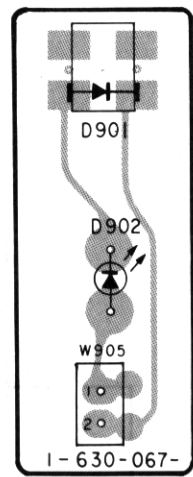
VF-22PBOARD (COMPONENT SIDE)



VF-22PBOARD (CONDUCTOR SIDE)



LD-17PBOARD



VF-22P BOARD

DIODE

D903 8-719-400-20 DIODE MA152WA

IC

IC901 8-759-420-01 IC AN2512S

TRANSISTOR

Q903 8-729-106-68 TRANSISTOR 2SD1615A-GP
Q904 8-729-216-31 TRANSISTOR 2SA1163G

LD-17P BOARD

DIODE

D901 8-719-941-34 DIODE GL1HD51-TE84L

(See Page 104.)

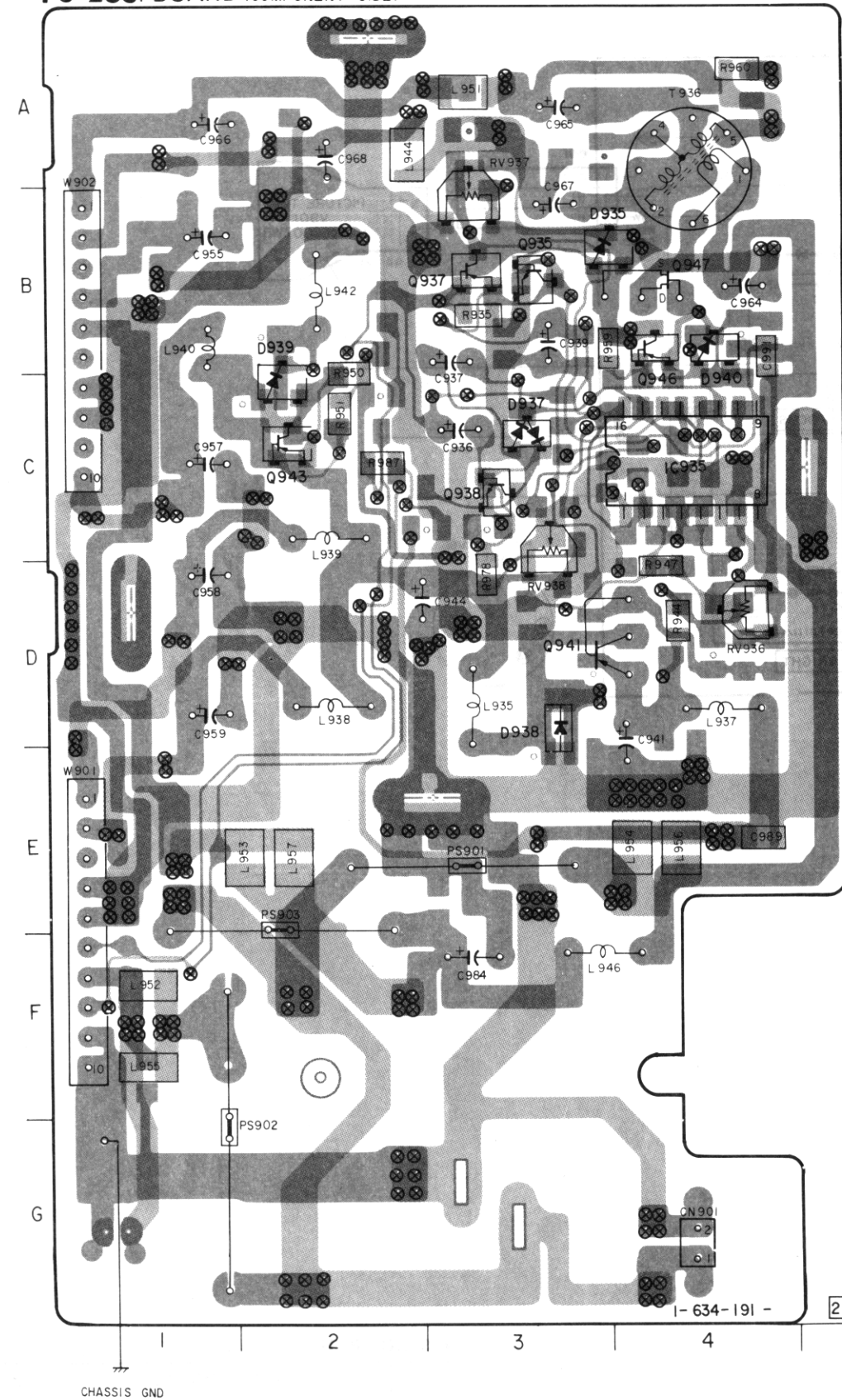


	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC				
PB				

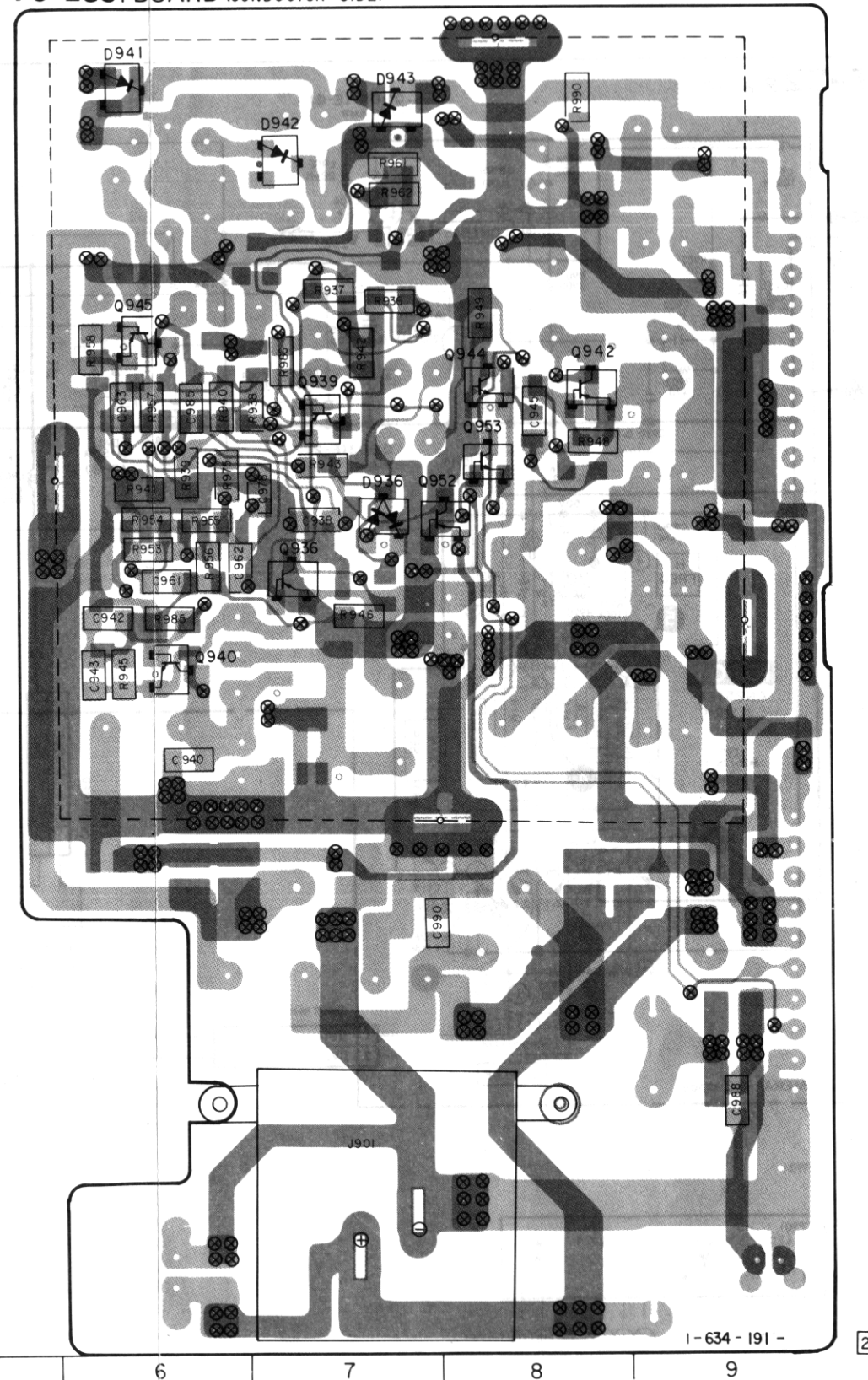
PS-263P (POWER SUPPLY) PRINTED WIRING BOARDS

- Ref. No. PS-263P BOARD : 1000 series -

PS-263PBOARD (COMPONENT SIDE)



PS-263PBOARD (CONDUCTOR SIDE)



DIODE

D935	8-719-106-71	DIODE RD12M-B2
D936	8-719-800-76	DIODE 1SS226
D937	8-719-800-76	DIODE 1SS226
D938	8-719-510-11	DIODE D1FS4
D939	8-719-801-48	DIODE 1SS193

D940	8-719-801-48	DIODE 1SS193
D941	8-719-802-36	DIODE 1SS250
D942	8-719-801-48	DIODE 1SS193
D943	8-719-801-48	DIODE 1SS193

IC

IC935	8-759-937-36	IC TL1451ACNS
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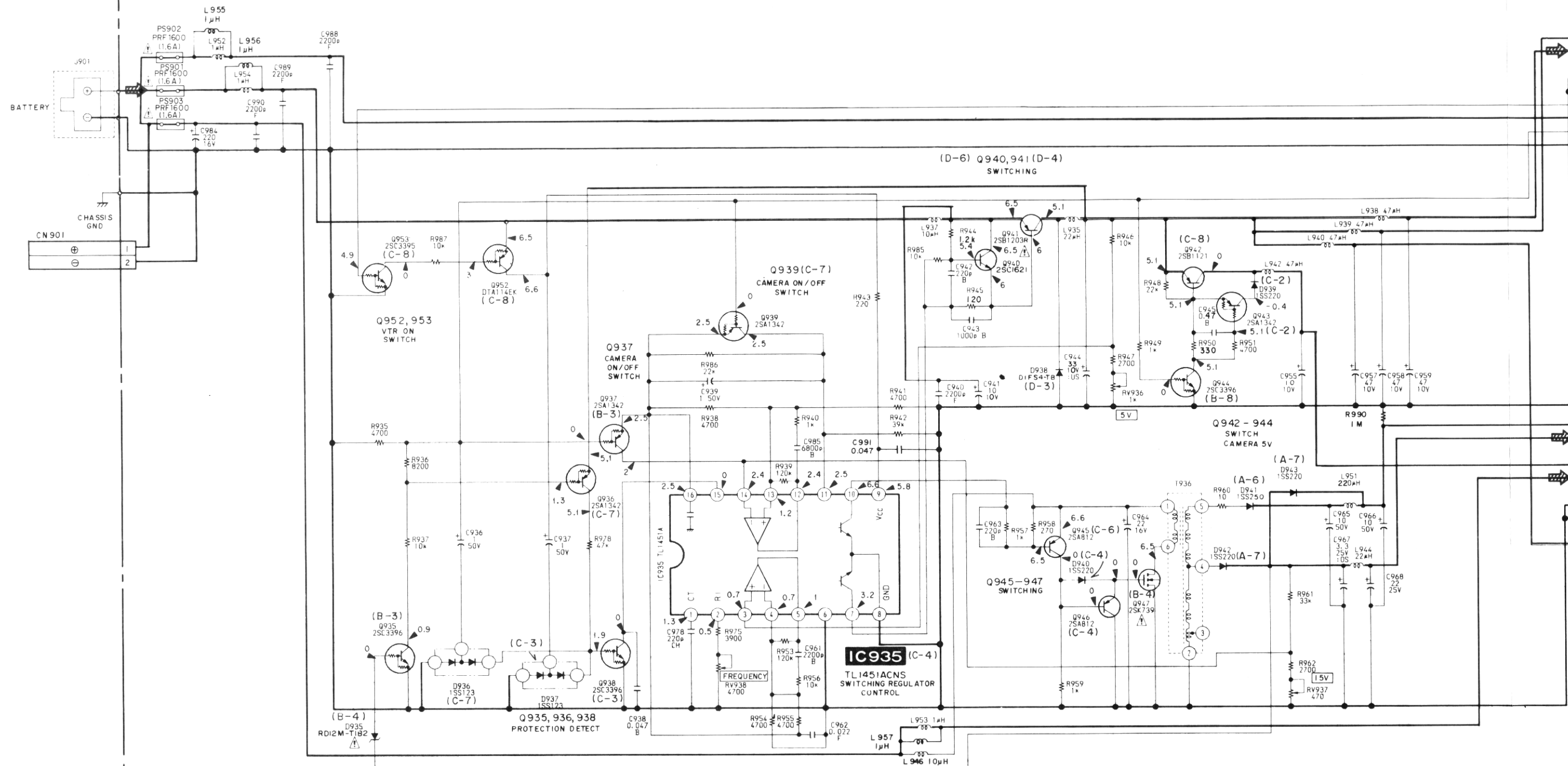
TRANSISTOR

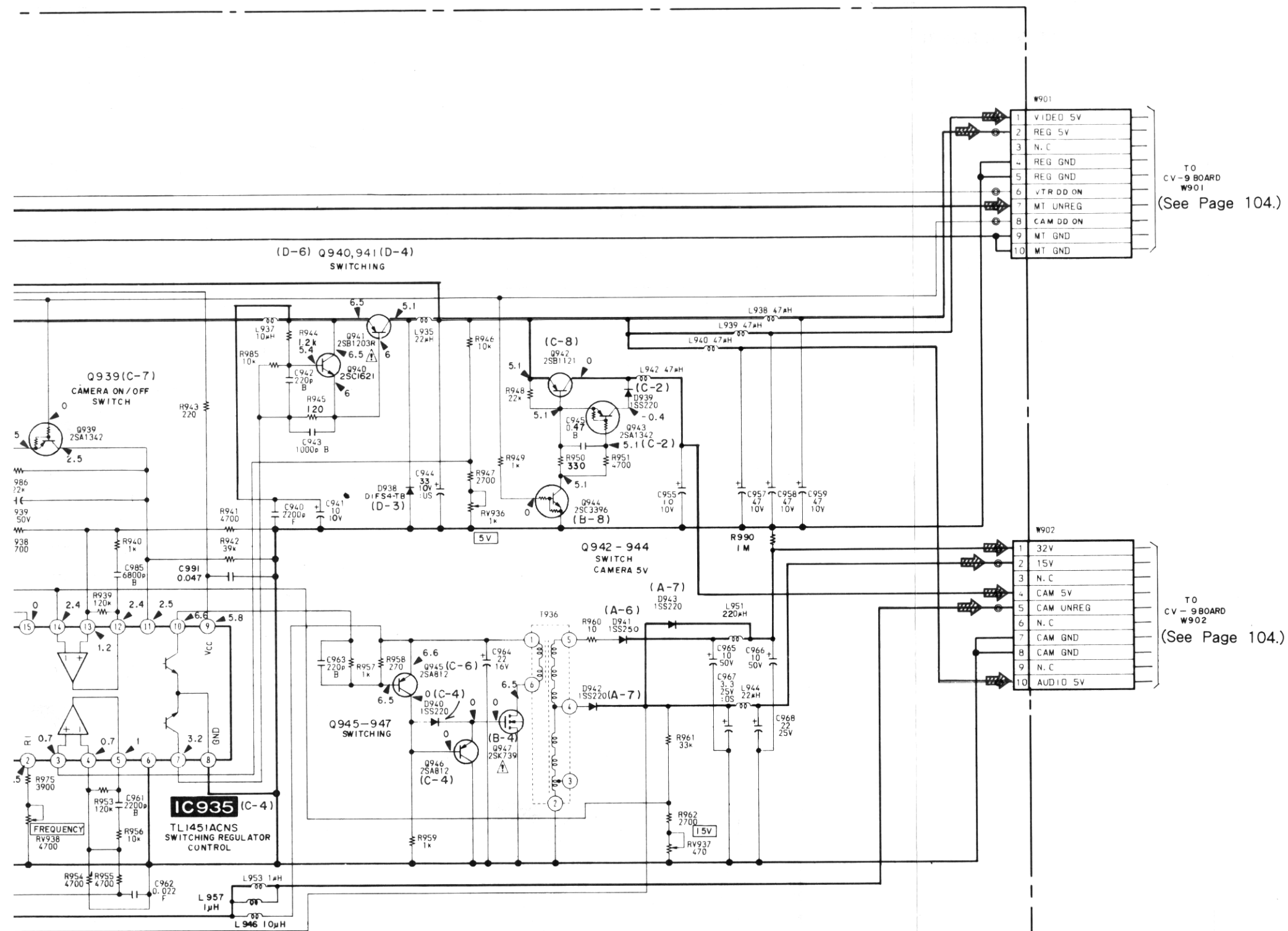
Q935	8-729-901-00	TRANSISTOR DTC124EK
Q936	8-729-901-05	TRANSISTOR DTA124EK
Q937	8-729-901-05	TRANSISTOR DTA124EK
Q938	8-729-901-00	TRANSISTOR DTC124EK
Q939	8-729-901-05	TRANSISTOR DTA124EK

Q940	8-729-100-67	TRANSISTOR 2SC1623-L7
Q941	8-729-105-29	TRANSISTOR 2SB1203-S
Q942	8-729-805-25	TRANSISTOR 2SB1121
Q943	8-729-901-05	TRANSISTOR DTA124EK
Q944	8-729-901-00	TRANSISTOR DTC124EK

Q945	8-729-216-22	TRANSISTOR 2SA1162
Q946	8-729-216-22	TRANSISTOR 2SA1162
Q947	8-729-140-55	TRANSISTOR 2SK739
Q952	8-729-901-04	TRANSISTOR DTA114EK
Q953	8-729-901-01	TRANSISTOR DTC144EK

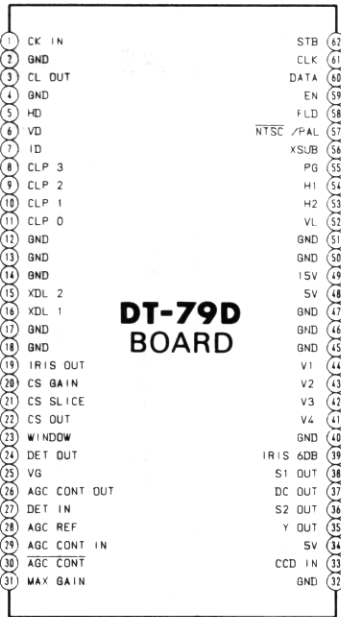
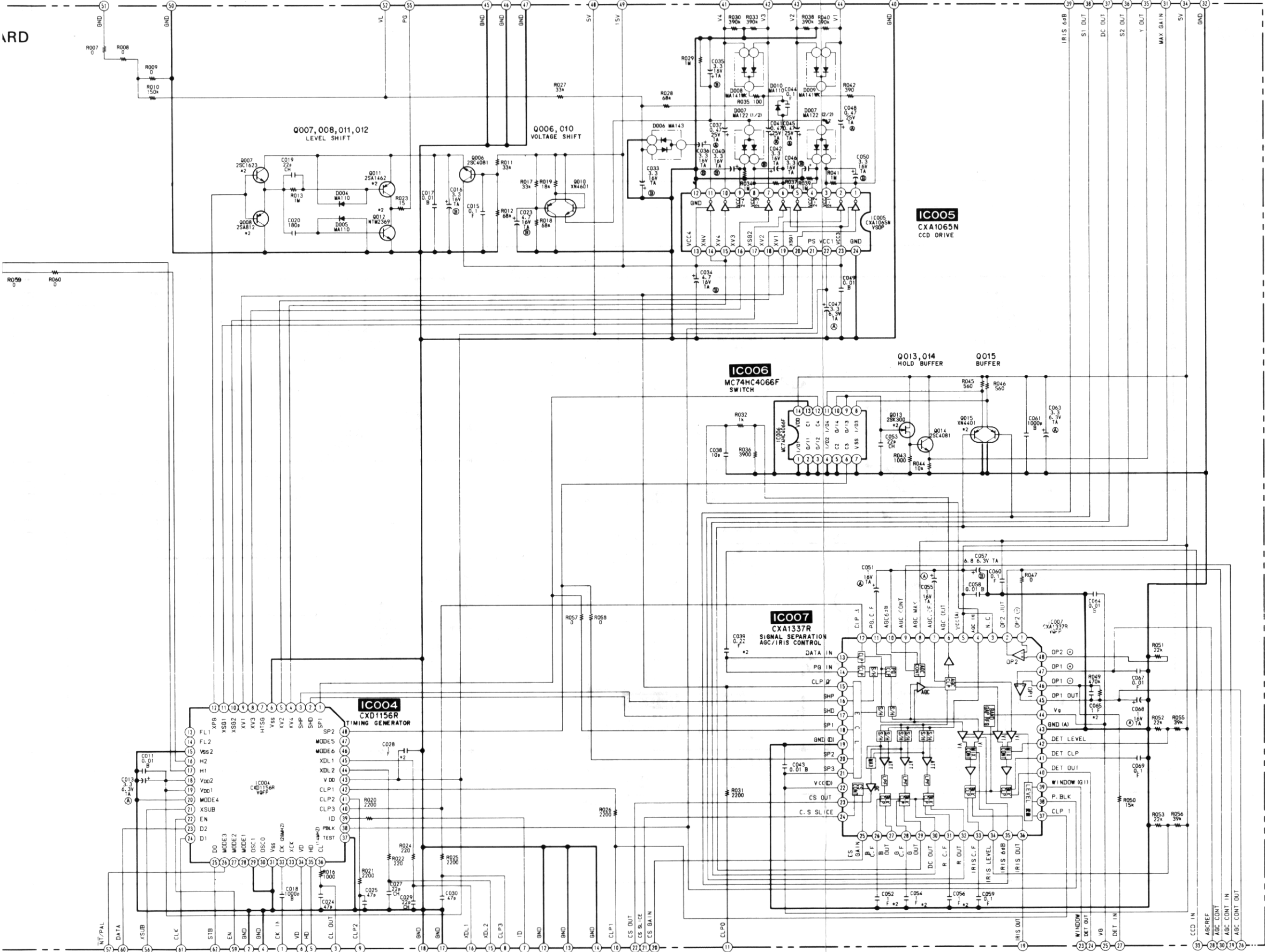
- Ref. No. PS-263P BOARD : 1000 series -





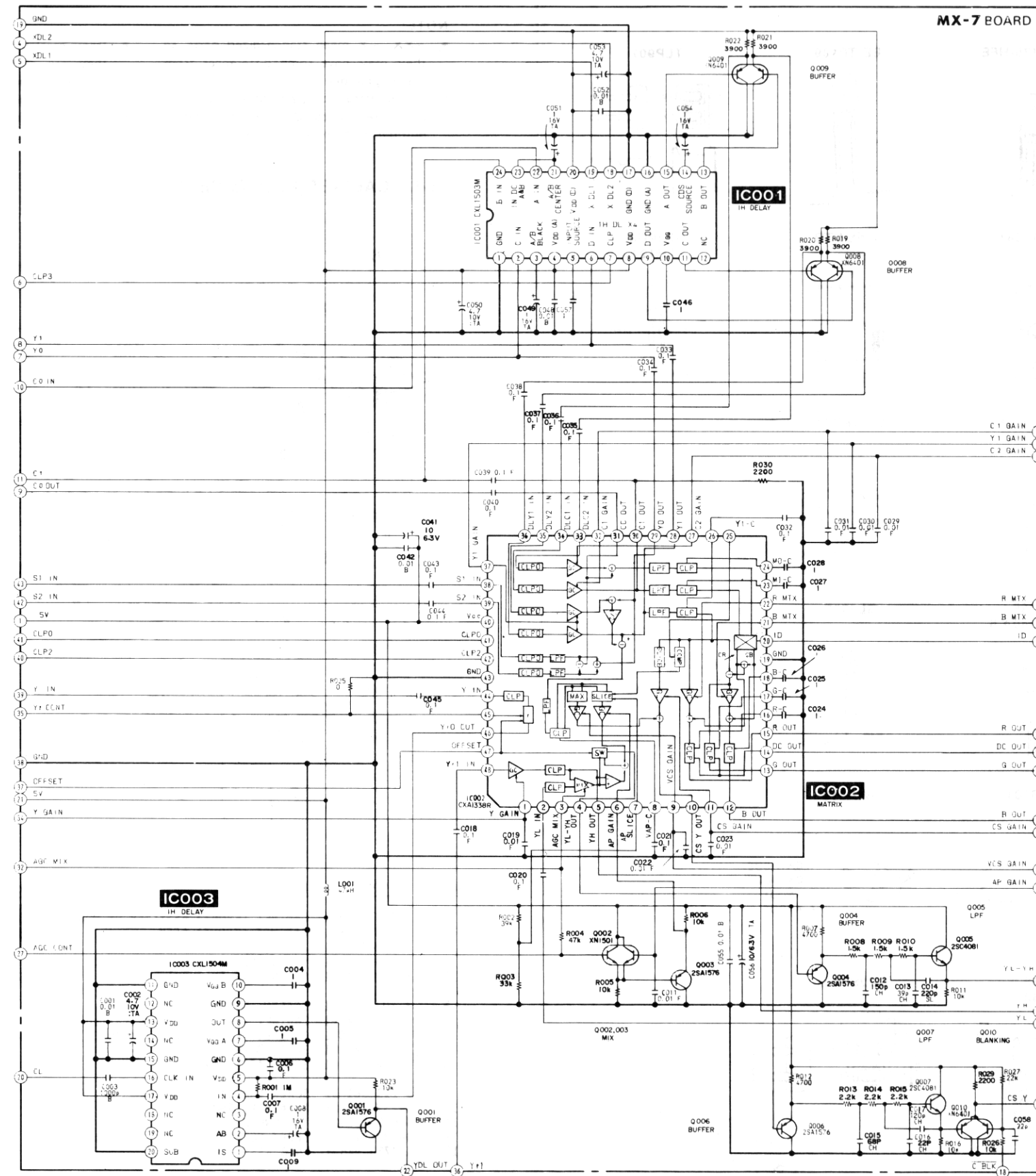
1	2	3	4	5	6	7	8	9	10	11	12	13
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PRINTED WIRING BOARD of it is omitted.



MX-7 board is replaced as a block, so that the
PRINTED WIRING BOARD of it is omitted.

A
B
C
D
E
F
G
H
I
J



SECTION 5

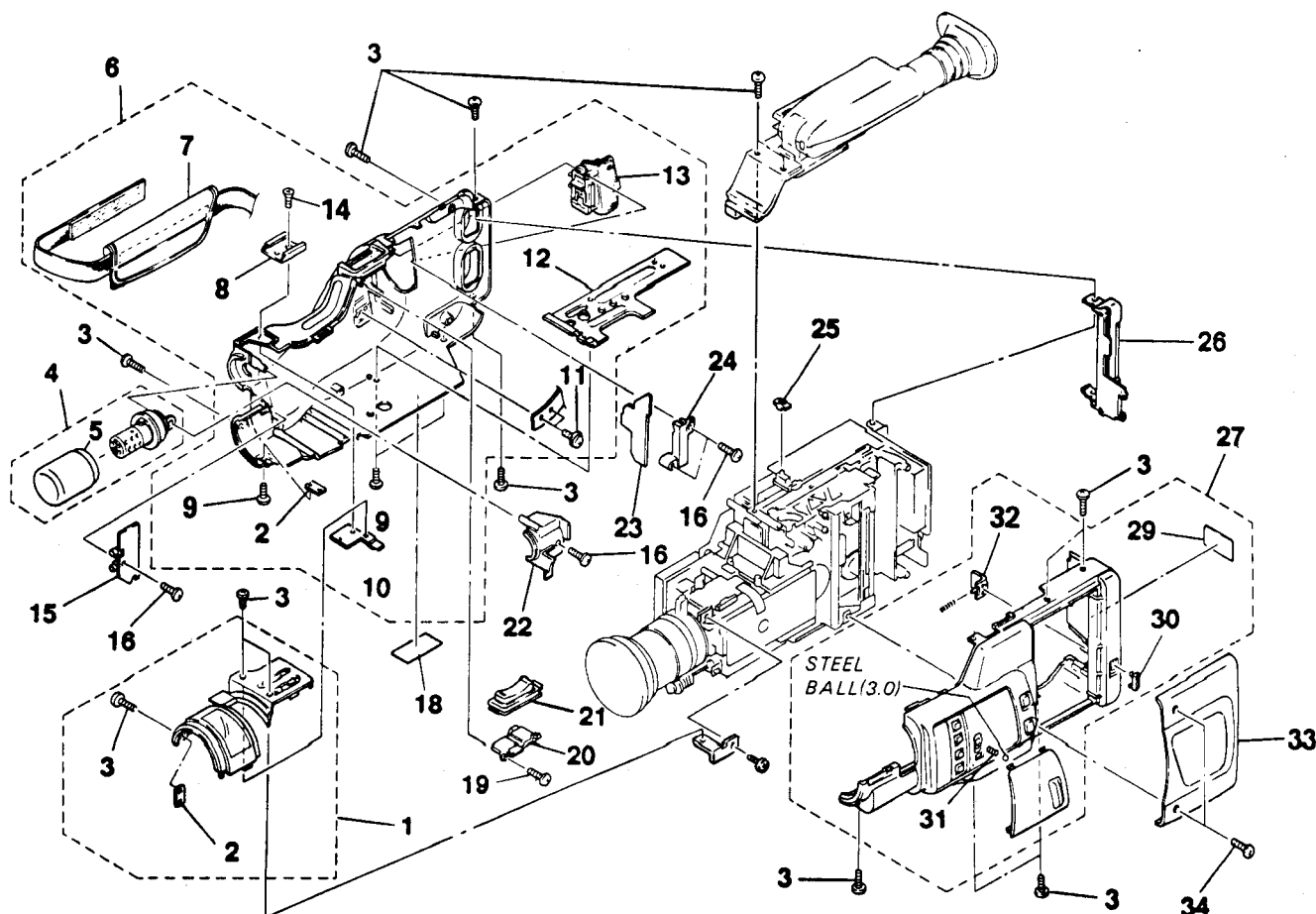
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

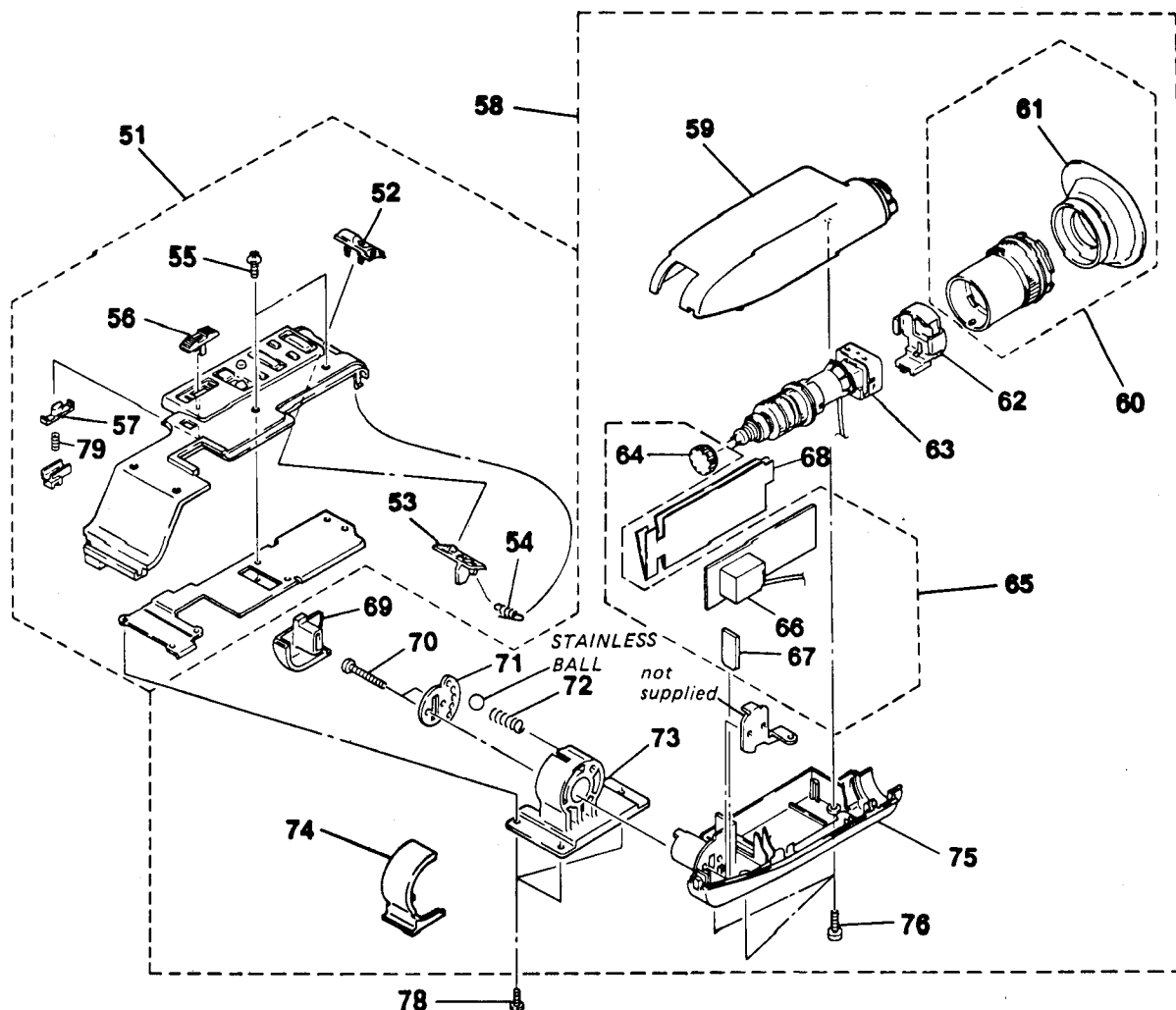
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

5-1. CABINET (R, L) ASSEMBLY



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	X-3737-743-1	CABINET (FRONT) ASSY(AEP/UK MODEL)	2, 3	18	*3-746-801-01	LABEL, MODEL NUMBER (AU) (Australian)	
2	X-3737-768-1	CABINET (FRONT) ASSY	2, 3		*3-746-802-01	LABEL, MODEL NUMBER (E)	
3	3-732-912-01	JOINT, L/R		19	3-713-790-21	SCREW (M2X6), TAPPING, P3	
4	3-719-381-01	SCREW (M2X4)		20	*3-732-937-01	RETAINER, ZOOM BUTTON	
	1-542-101-11	MICROPHONE (C-2020)	5	21	1-571-837-11	SWITCH, PUSH (ZOOM SWITCH) (S901)	
5	3-707-650-11	SCREEN, WIND		22	3-737-737-11	HOUSING, MICROPHONE	
6	X-3733-944-1	CABINET (L) ASSY (E/Australian)	2, 7-14	23	*1-634-192-21	RC-40P BOARD	
7	X-3737-738-1	CABINET (L) ASSY (AEP/UK MODEL)	2, 7-14	24	*3-732-928-01	STOPPER, RC	
8	3-719-323-01	BELT, GRIP		25	3-732-926-01	BUTTON, EDIT	
	3-724-511-01	SHOE, ACCESSORY		26	3-732-924-31	BLIND, L/R	
9	3-719-381-31	SCREW (M2X3)		27	X-3737-711-1	CABINET (R) ASSY (E/Australian)	28-32
10	3-737-723-01	RETAINER, SHOE			X-3737-742-1	CABINET (R) ASSY (AEP/UK MODEL)	28-32
11	3-669-480-21	+ PTPWH 2		28	3-426-508-00	SPRING, COMPRESSION	
12	*3-732-911-01	SHEET METAL, TRIPOD		29	*3-719-683-01	LABEL, BATTERY FITTING	
13	X-3733-948-1	KNOB ASSY, SP		30	3-732-905-01	BUTTON, BATTERY RELEASE	
14	3-719-831-21	SCREW (M2X4)		31	3-576-098-00	SPRING, COMPRESSION	
15	*A-7062-205-A	MA-66P BOARD, COMPLETE		32	3-732-906-01	LOCK, BATTERY	
16	3-713-790-31	SCREW (M2X8), TAPPING, P3		33	X-3737-734-1	LID ASSY, CASSETTE (AEP/UK/E MODEL)	
18	*3-741-581-01	LABEL, MODEL NUMBER (AEP MODEL)			X-3737-750-1	LID ASSY, CASSETTE (Australian MODEL)	
	*3-741-589-01	LABEL, MODEL NUMBER (UK) (UK MODEL)		34	3-733-912-01	SCREW (M2X2.5), SPECIAL HEAD	

5-2. CABINET (UPPER), EVF ASSEMBLY (TYPE A)

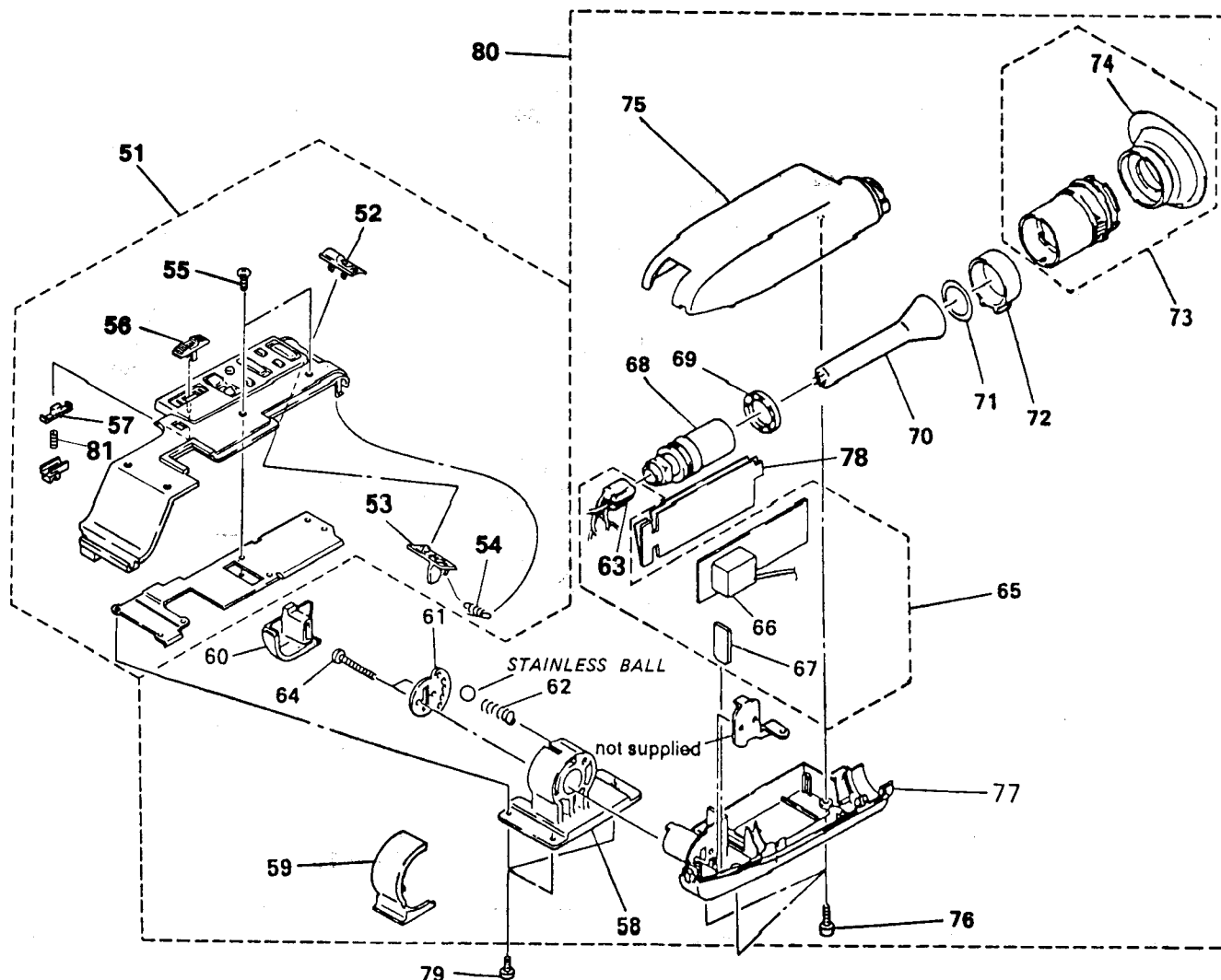


Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

*** A TYPE ***

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	X-3737-740-1	CABINET (UPPER) ASSY (AEP/UK MODEL)	52-57, 79	64	 .1-540-019-21	SOCKET ASSY, CRT (W901)	
	X-3737-753-1	CABINET (UPPER) ASSY (E/Australian)		65	*A-7061-609-A	VF-14P BOARD, COMPLETE	64, 66, 67
52	3-732-919-01	BUTTON, EJECT	52-57, 79	66	 .1-439-431-11	TRANSFORMER ASSY, FLYBACK (T901)	
53	3-732-920-01	LOCK, EJECT		67	*1-629-384-21	LD-13P BOARD	
54	3-669-440-00	SPRING, TENSION		68	*3-733-914-01	INSULATOR, EVF	
55	3-719-381-01	SCREW (M2X4)		69	3-732-949-31	BLIND, EVF CABINET (LOWER)	
56	3-718-226-01	BUTTON, POWER		70	3-732-987-01	SCREW (M2X20), +P	
57	*3-718-257-11	BUTTON, PUSH, POWER		71	3-732-947-01	PLATE, LOCK	
58	*A-7019-220-A	EVF COMPLETE ASSY	59-76	72	3-732-946-01	SPRING, COMPRESSION	
59	3-732-948-51	CABINET (UPPER), EVF		73	3-732-944-11	BEARING, EVF	
60	A-7081-148-A	HOLDER BLOCK ASSY, FINDER	61	74	3-732-950-31	BLIND, EVF	
61	3-733-922-01	EYE CUP		75	X-3737-722-1	CABINET (LOWER) ASSY, EVF	
62	X-3732-910-1	HOLDER ASSY, CRT		76	3-713-790-31	SCREW (M2X8), TAPPING, P3	
63	 .1-452-482-11	CRT ASSY (M91JYZ60WB)		78	3-732-988-01	SCREW (M2X2.5)	
				79	3-303-973-00	SPRING, COMPRESSION	

5-3. CABINET (UPPER), EVF ASSEMBLY (TYPE B)

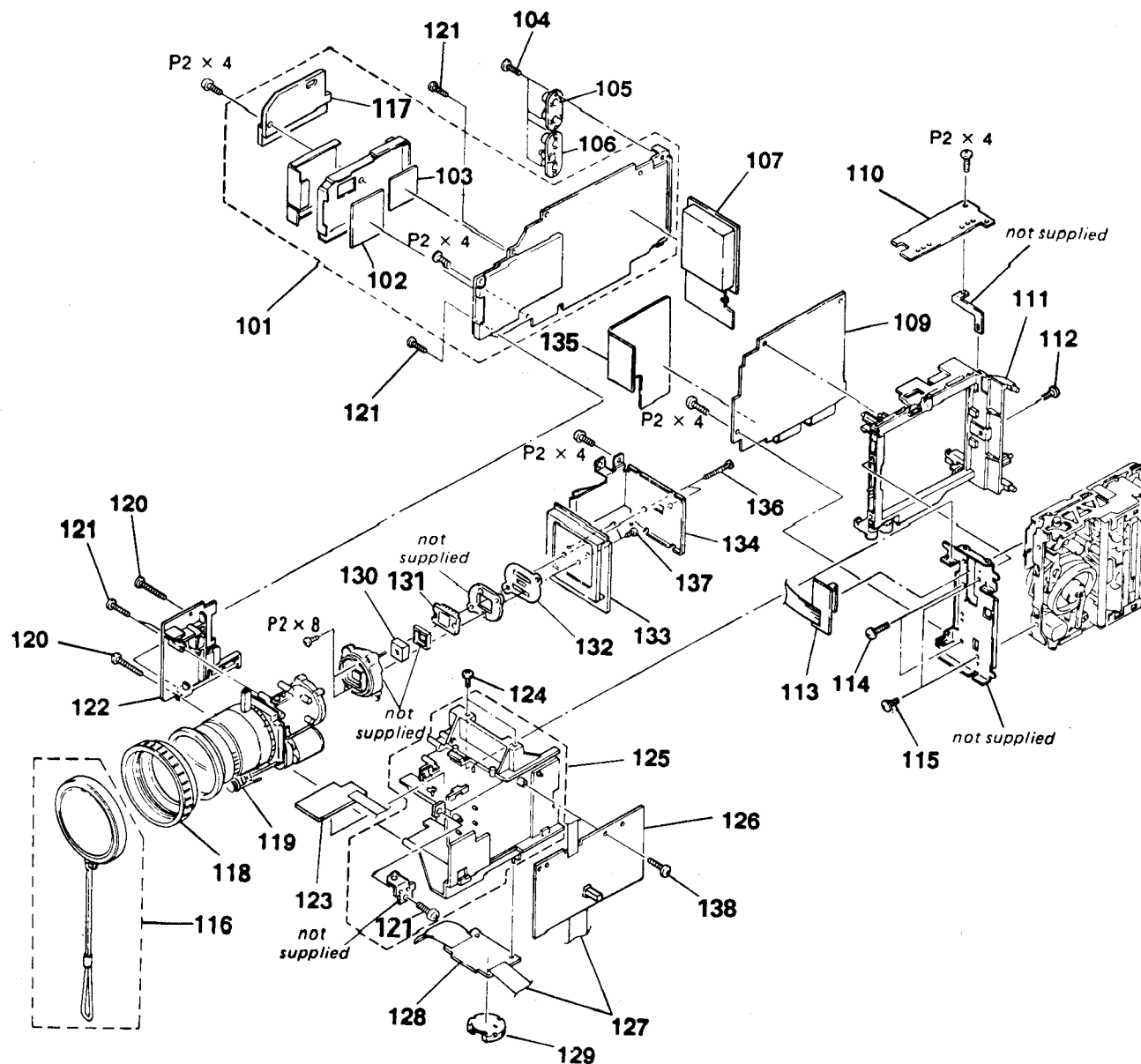


*** B TYPE ***

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	X-3737-740-1	CABINET (UPPER) ASSY (AEP/UK MODEL)	52-57, 81	65	*A-7062-012-A	VF-22P BOARD, COMPLETE	63, 66, 67
	X-3737-753-1	CABINET (UPPER) ASSY (E/Australian)	52-57, 81	66	A-1-439-428-11	TRANSFORMER ASSY, FLYBACK (T901)	
52	3-732-919-01	BUTTON, EJECT		67	*1-630-067-21	LD-17P BOARD	
53	3-732-920-01	LOCK, EJECT		68	A-1-451-310-21	DEFLECTION YOKE (B/W)	
54	3-669-440-00	SPRING, TENSION		69	3-724-549-01	LOCK, CRT	
55	3-719-381-01	SCREW (M2X4)		70	A-1-546-085-11	CATHODE-RAY TUBE, B/W (M01KGG007WB)	
56	3-718-226-01	BUTTON, POWER		71	3-724-570-01	RING, CRT FIXED	
57	*3-718-257-11	BUTTON, PUSH, POWER		72	X-3724-509-1	HOLDER ASSY, CRT	
58	3-732-944-11	BEARING, EVF		73	A-7081-148-A	HOLDER BLOCK ASSY, FINDER	74
59	3-732-950-31	BLIND, EVF		74	3-733-922-01	EYE CUP	
60	3-732-949-31	BLIND, EVF CABINET (LOWER)		75	3-732-948-51	CABINET (UPPER), EVF	
61	3-732-947-01	PLATE, LOCK		76	3-713-790-31	SCREW (M2X8), TAPPING, P3	
62	3-732-946-01	SPRING, COMPRESSION		77	X-3737-722-1	CABINET (LOWER) ASSY, EVF	
63	A-1-526-978-21	SOCKET ASSY, CRT (CRT-901)		78	*3-733-914-01	INSULATOR, EVF	
64	3-732-987-01	SCREW (M2X20), +P		79	3-732-988-01	SCREW (M2X2.5)	
				80	*A-7019-221-A	EVF COMPLETE ASSY	58-78
				81	3-303-973-00	SPRING, COMPRESSION	

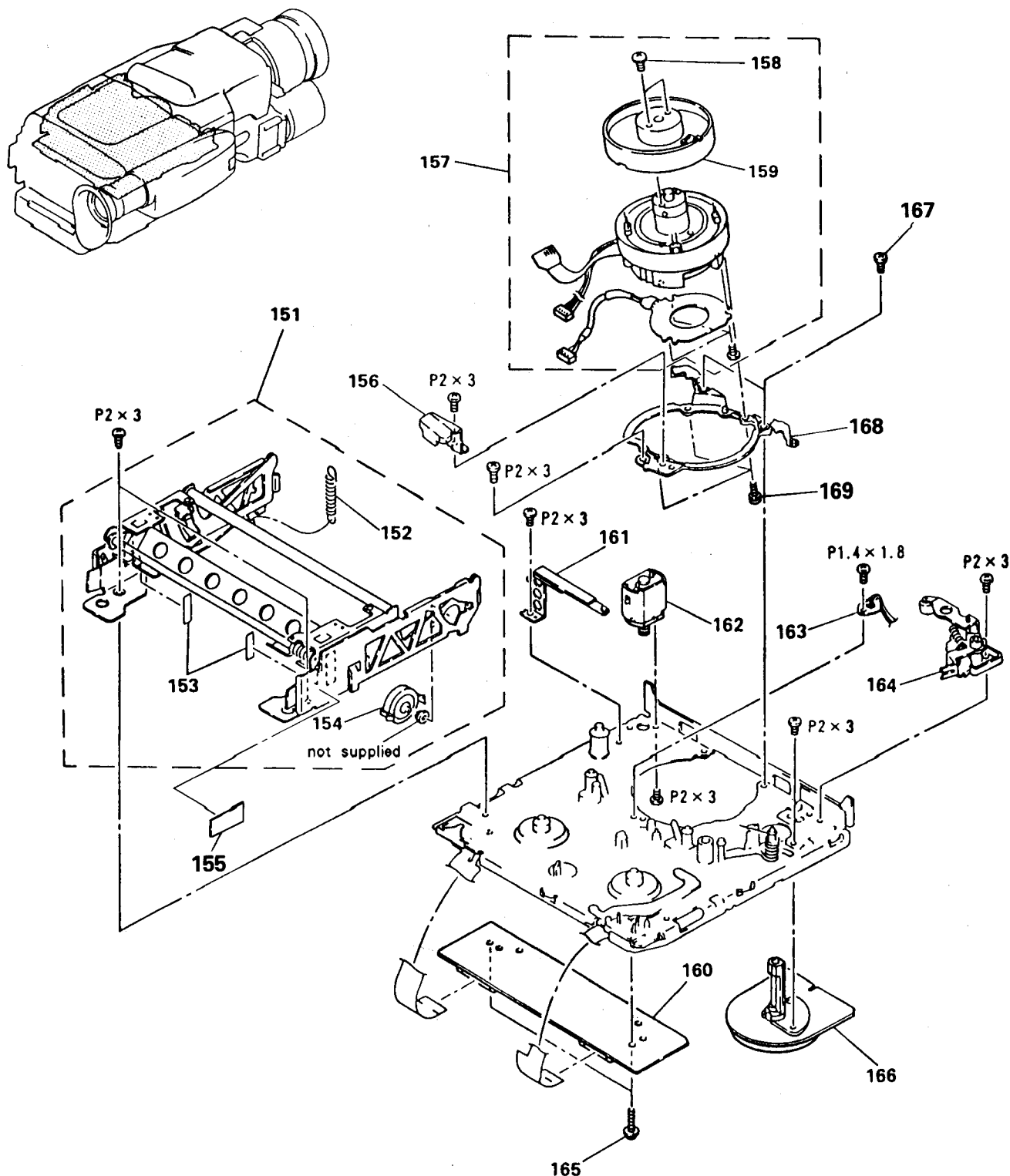
5-4. MAIN BOARD ASSEMBLY

Be sure to read "Precautions for Replacement of CCD Imager" on page 87 when changing the CCD imager.



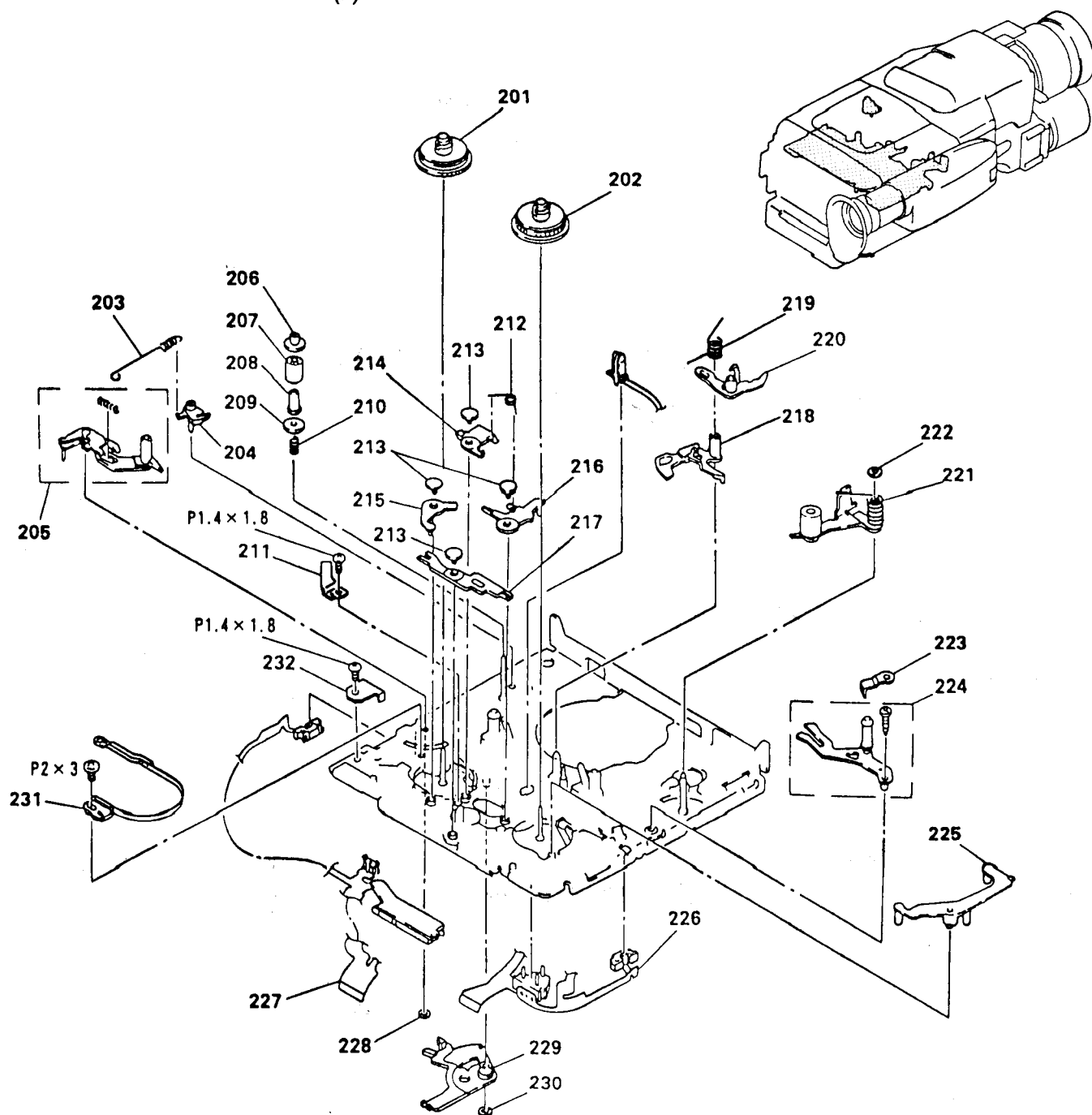
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	*A-7062-204-A	CV-9 BOARD, COMPLETE (AEP/UK MODEL)		118	3-728-269-01	HOOD	
		102, 103, 117		119	1-547-407-11	LENS, ZOOM (VCL-706WA)	
	*A-7062-230-A	CV-9 BOARD, COMPLETE (E/Australian)		120	3-713-790-31	SCREW (M2X8), TAPPING, P3	
		102, 103, 117		121	3-713-790-21	SCREW (M2X6), TAPPING, P3	
102	A-7068-178-A	DT-79D BOARD, COMPLETE (HIC)		122	3-741-521-01	HOLDER (BT6), LENS	
103	A-7068-128-A	MX-7 BOARD, COMPLETE (HIC)		123	*1-634-186-21	DK-10P BOARD	
104	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD		124	3-719-381-01	SCREW (M2X4)	
105	1-568-409-11	JACK, PIN 2P (AUDIO/VIDEO IN) (J202)		125	X-3737-707-1	HOLDER ASSY, LENS	121
		(E/Australian MODEL)		126	*A-7062-200-A	CK-43P BOARD, COMPLETE	123
106	1-537-142-11	TERMINAL BOARD		127	1-575-064-11	CABLE, FLAT (1.0MM PITCH) 18P (W651)	
		(AUDIO/RFU DC/VIDEO OUT) (J201)		128	*1-630-547-11	LI-10 BOARD	
107	*A-7062-202-A	PS-263P BOARD, COMPLETE		129	1-550-104-32	HOLDER, BATTERY	
109	*A-7061-599-A	CO-2P BOARD, COMPLETE (AEP/UK MODEL)		130	1-547-408-11	FILTER, INFRARED CUT (IR-03)	
	*A-7061-689-A	CO-2P BOARD, COMPLETE (E/Australian)		131	8-752-604-51	IC ICX045AK-1 (CCD IMAGER) (IC601)	
110	*1-634-189-21	VK-11P BOARD		132	*3-741-525-01	SHEET, INSULATING, CCD	
111	*3-732-932-01	HOLDER, MD		133	*A-7062-197-A	CD-40P BOARD, COMPLETE	
112	3-732-791-01	SCREW (M2X3)		134	*X-3737-708-1	SHIELD (CD) ASSY, CAMERA	
113	*1-634-188-21	KS-11P BOARD		135	*3-741-576-01	SHIELD, FE	
114	3-713-790-11	SCREW (M2X5), TAPPING, P3		136	3-335-640-91	SCREW (M2X11)	
115	3-732-816-01	SCREW, STEP		137	3-719-408-01	SCREW (B2), TAPPING, P3	
116	A-7090-806-A	CAP ASSY, HOOD		138	3-713-786-51	SCREW (M2X3)	
117	*A-7051-959-A	PJ-20 BOARD, COMPLETE					

5-5. MD BLOCK ASSEMBLY (1)



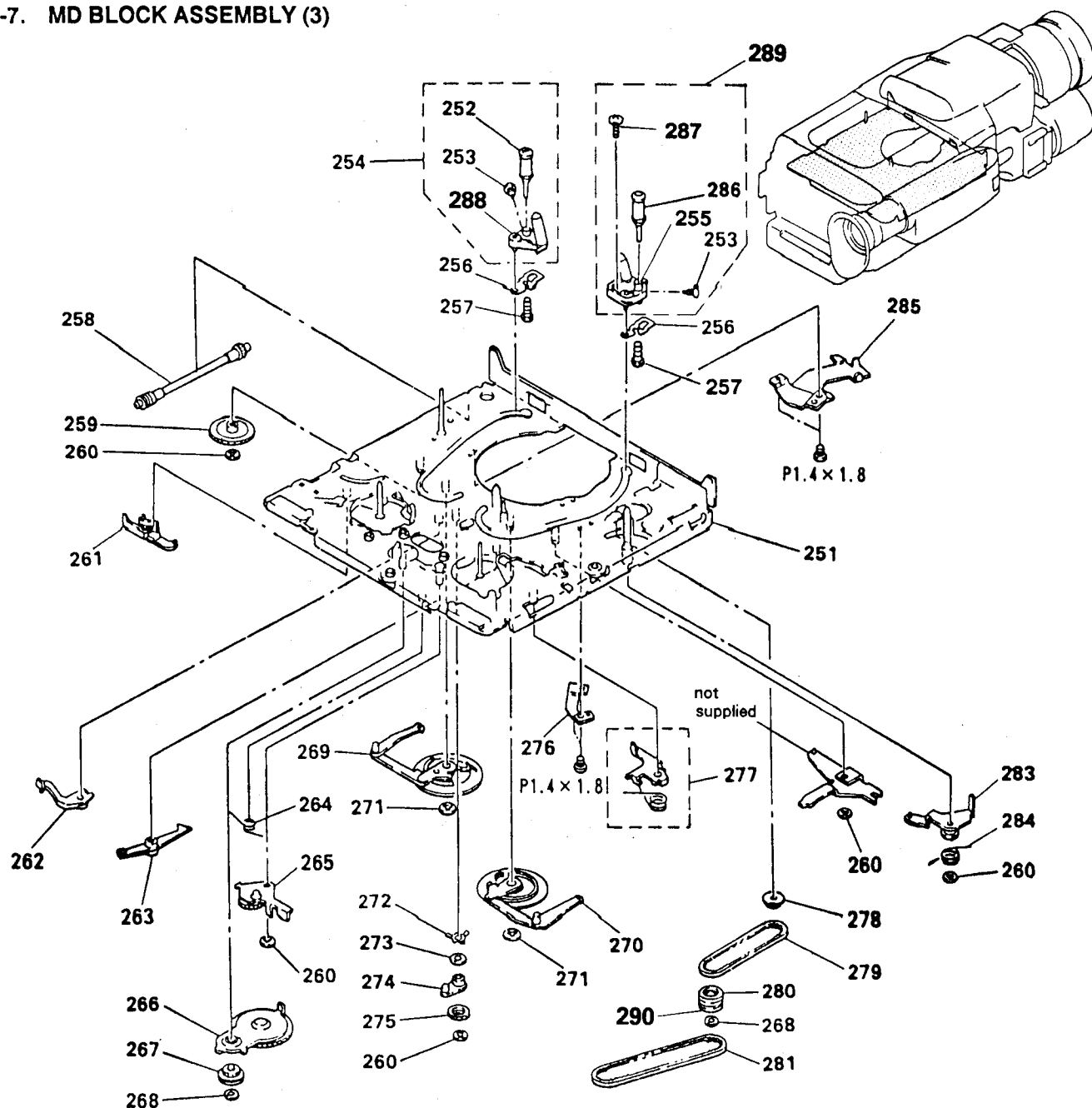
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	X-3728-874-1	CASSETTE COMPARTMENT ASSY (N)	152-154	160	*A-7062-198-A	CC-51P BOARD, COMPLETE	
152	3-728-825-03	SPRING, TENSION		161	X-3728-864-1	GROUND ASSY, SHAFT	
153	*3-728-829-01	TAPE		162	A-7040-160-A	MOTOR ASSY, THREADING (M903)	
154	3-728-867-02	DAMPER, OIL		163	1-808-505-12	SENSOR (DEW)	
155	*3-730-176-11	SHEET, MD		164	A-7040-161-B	ROLLER BLOCK ASSY, HC	
156	3-728-868-01	GUARD, GUIDE		165	3-713-790-01	SCREW (M2X5), TAPPING, P3	
157	A-7048-287-A	DRUM ASSY (DGR-42B-R)	158, 159	166	8-835-331-01	MOTOR, DC U-22A (CAPSTAN) (M902)	
158	3-686-493-01	SCREW (M2X5), P1		167	3-736-406-01	SCREW (3) (M2X10)	
159	A-7049-215-A	DRUM ASSY, UPPER, ROTARY (DGR-42R)		168	X-3686-474-1	BASE ASSY, DRUM	
				169	3-686-493-01	SCREW (M2X5), P1	

5-6. MD BLOCK ASSEMBLY (2)



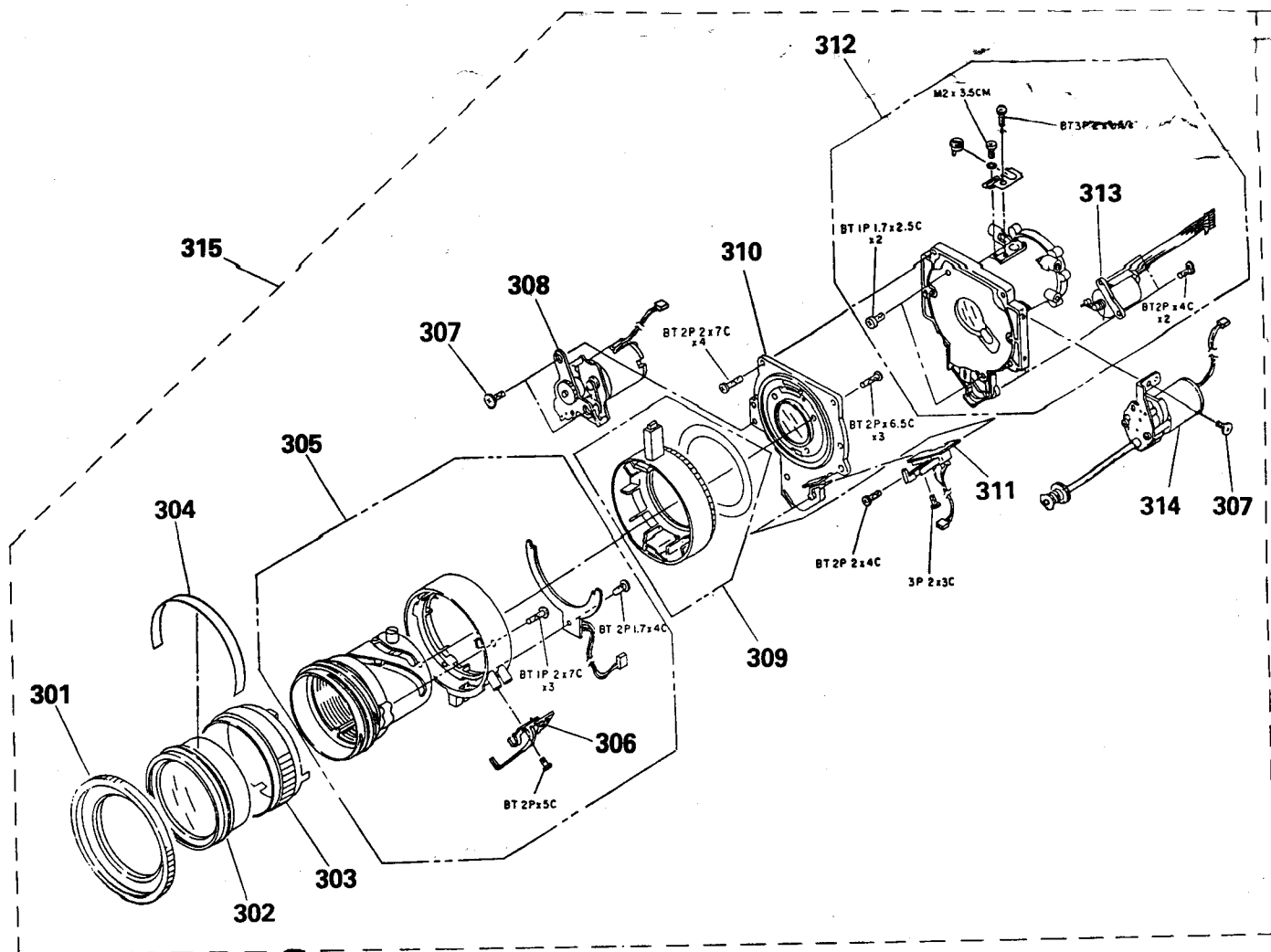
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
201	X-3728-851-1	TABLE ASSY, REEL, S		217	3-726-853-01	LEVER, LB	
202	X-3728-855-1	TABLE ASSY, REEL, T		218	3-728-875-01	STOPPER, RK	
203	3-736-414-01	SPRING, TENSION		219	3-726-864-01	SPRING (RK), TORSION	
204	3-728-855-03	ARM, ADJUSTMENT		220	3-728-852-02	ARM, RK STOPPER	
205	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR		221	A-7040-219-A	ARM BLOCK ASSY, PINCH	
206	3-726-884-01	FLANGE, UPPER, TG2		222	3-669-465-00	WASHER (1.5), STOPPER	
207	3-726-883-01	ROLLER, TG2		223	3-728-808-01	SPRING, LEAF	
208	3-726-885-01	SLEEVE, TG2		224	X-3728-869-1	ARM ASSY, TG7	
209	3-726-882-02	FLANGE, LOWER, TG2		225	3-728-848-01	ARM, LB RELEASE	
210	3-726-886-01	SPRING, COMPRESSION		226	1-628-061-12	FP-90 FLEXIBLE BOARD	
211	3-726-848-01	RETAINER, TL		227	1-628-060-12	FP-89 FLEXIBLE BOARD	
212	3-726-866-01	SPRING (ST), TORSION		228	3-321-393-11	WASHER, STOPPER	
213	3-726-858-01	PIN, SHAFT RETAINER		229	X-3726-806-2	LEVER ASSY, SW	
214	3-728-849-01	BRAKE, S		230	3-726-829-01	WASHER, STOPPER	
215	3-726-852-01	BRAKE, LB		231	X-3726-809-2	BAND ASSY, TENSION REGULATOR	
216	3-728-850-01	BRAKE, T		232	3-730-125-01	RETAINER, SW	

5-7. MD BLOCK ASSEMBLY (3)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
251	*X-3728-801-1	CHASSIS ASSY, MECHANICAL		271	3-669-465-00	WASHER (1.5), STOPPER	
252	X-3726-820-1	ROLLER ASSY (U), GUIDE		272	3-726-867-01	SPRING, LEAF	
253	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD		273	3-701-436-21	WASHER, POLYETHYLENE	
254	A-7040-128-A	COASTER (LEFT) BLOCK ASSY 252, 253, 288		274	3-726-857-02	ARM, UL	
255	X-3728-852-1	COASTER (RIGHT) ASSY		275	3-726-856-02	GEAR, UL	
256	3-736-485-01	SPRING, LEAF, COSTER		276	*3-726-805-01	REINFORCEMENT (TT)	
257	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)		277	X-3726-808-2	BRAKE ASSY, TS	
258	X-3728-868-1	WORM ASSY		278	X-3726-805-1	GEAR ASSY, JOINT	
259	3-744-109-01	GEAR, WHEEL		279	3-728-866-11	BELT (S), TIMING	
260	3-726-829-01	WASHER, STOPPER		280	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
261	3-728-842-01	LEVER, EJECT		281	3-741-197-01	BELT (L), TIMING	
262	3-728-851-01	BRAKE, UL		283	X-3726-824-1	ARM ASSY, PINCH SUB	
263	3-726-854-01	ARM, BRAKE RELEASE		284	3-726-895-01	SPRING	
264	3-726-865-01	SPRING (LB), TORSION		285	X-3726-841-1	REINFORCEMENT (SS) ASSY	
265	A-7040-130-A	GEAR BLOCK ASSY, LB		286	X-3728-810-1	ROLLER ASSY (U)(PLATING), GUIDE	
266	X-3728-866-1	GEAR ASSY, RK		287	3-736-473-01	SCREW (M2X6.5) (THREE LOCK)	
267	X-3728-858-1	GEAR ASSY, RC		288	X-3726-818-1	COASTER (LEFT) ASSY	
268	3-321-393-11	WASHER, STOPPER		289	A-7040-217-A	COASTER (RIGHT) BLOCK ASSY (N1P) 253, 255, 286, 287	
269	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE		290	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	
270	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE					

5-8. LENS BLOCK



No.	Part No.	Description
301	3-737-789-01	ADAPTOR(T), LENS HOOD
302	3-707-563-01	RING UNIT, F
303	3-707-564-01	RING, F SCALE
304	7-632-701-38	TAPE, POLYESTER
305	3-707-902-01	MIRROR TUBE ASSY, MAIN
306	3-707-905-01	BEARING, F
307	3-707-904-01	FITTING SCREW, MOTOR
308	3-707-562-01	MOTOR ASSY, PZ GEAR (M905)

No.	Part No.	Description	Remark
309	3-707-907-01	RING ASSY, ZOOM	
310	3-707-906-01	FRAME ASSY, MIDWAY	
311	3-707-566-01	SW ASSY, (F) LIMIT	
312	3-707-908-01	MIRROR TUBE ASSY, REAR	313
313	3-707-560-01	METER ASSY, EE	
314	3-707-903-01	MOTOR ASSY, AF GEAR	
315	1-547-407-11	LENS, ZOOM (VCL-706WA)	301-314

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

- -XX, -X mean standardized parts, so they may have some difference from the original one.

RESISTORS

All resistors are in ohms

METAL : Metal-film resistor

METAL OXIDE : Metal Oxide-film resistor

F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

SEMICONDUCTORS

In each case, U : μ , for example:

UA... : μ A..., UPA... : μ PA...,

UPB... : μ PB..., UPC... : μ PC...,

UPD... : μ PD...

CAPACITORS

MF : μ F, PF : μ F

COILS

MMH : mH, UH : μ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7061-609-A	VF-14P BOARD, COMPLETE	(Ref.No 7,000 Series)		R911	1-216-013-00	METAL GLAZE 33 5% 1/10W	
*3-674-372-00	HOLDER (A), LED			R912	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
	<u>CAPACITOR</u>			R913	1-216-107-00	METAL GLAZE 270K 1% 1/10W	
C901	1-124-442-00	ELECT 330MF 20% 6.3V		R914	1-216-025-00	METAL GLAZE 100 5% 1/10W	
C903	1-163-077-00	CERAMIC CHIP 0.1MF 50V		R915	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
C904	1-126-160-11	ELECT 1MF 20% 50V		R917	1-216-047-00	METAL GLAZE 820 5% 1/10W	
C905	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V		R918	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
C906	1-131-387-41	TANTALUM 47MF 10% 6.3V		R919	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
C907	1-162-638-11	CERAMIC CHIP 1MF 16V		R920	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
C908	1-136-165-00	FILM 0.1MF 5% 50V		R921	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
C909	1-163-105-00	CERAMIC CHIP 33PF 5% 50V		R922	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
C910	1-124-587-11	ELECT 220MF 20% 6.3V		R923	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
C911	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V		R924	1-216-131-11	METAL GLAZE 2.7M 5% 1/10W	
C912	Δ 1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V		R925	1-216-131-11	METAL GLAZE 2.7M 5% 1/10W	
C913	Δ 1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V		R926	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
C914	Δ 1-163-209-00	CERAMIC CHIP 0.0015MF 5% 50V		R927	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
C915	1-126-090-11	ELECT 82MF 20% 10V		R928	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
C916	1-126-094-11	ELECT 4.7MF 20% 35V		R929	1-216-047-00	METAL GLAZE 820 5% 1/10W	
C918	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V		R930	1-216-041-00	METAL GLAZE 470 5% 1/10W	
C919	1-102-038-00	CERAMIC 0.001MF 500V		R931	1-216-041-00	METAL GLAZE 470 5% 1/10W	
	<u>CONNECTOR</u>			R932	1-216-047-00	METAL GLAZE 820 5% 1/10W	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P		R933	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
CN903	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P			<u>VARIABLE RESISTOR</u>		
CN904	*1-566-759-11	PIN, CONNECTOR (PC BOARD) 4P		RV901	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
	<u>DIODE</u>			RV901	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
D903	8-719-400-20	DIODE MA152WA		RV902	1-230-866-11	RES, ADJ, METAL GLAZE 470	
	<u>IC</u>			RV902	1-230-866-11	RES, ADJ, METAL GLAZE 470	
IC901	8-759-420-01	IC AN2512S		RV904	1-228-762-00	RES, ADJ, METAL GLAZE 1M	
	<u>COIL</u>				<u>TRANSFORMER</u>		
L901	1-410-831-21	INDUCTOR 82UH		T901	Δ 1-439-431-11	TRANSFORMER ASSY, FLYBACK	
L902	1-408-976-21	INDUCTOR 33UH			<u>THERMISTOR</u>		
L903	Δ 1-459-876-21	COIL, FERRITE (HLC)		TH901	1-807-938-11	THERMISTOR	
	<u>TRANSISTOR</u>				<u>CONNECTOR</u>		
Q903	8-729-216-31	TRANSISTOR 2SA1163G		W901	1-540-019-21	SOCKET ASSY, CRT	
Q904	8-729-100-66	TRANSISTOR 2SC1623			*****		
Q905	8-729-106-68	TRANSISTOR 2SD1615A-GP			*1-629-384-22	LD-13P BOARD (Ref.No 8,000 Series)	
	<u>RESISTOR</u>				*****		
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W			<u>DIODE</u>		
R905	1-216-007-00	METAL GLAZE 18 5% 1/10W		D901	8-719-941-34	DIODE GL1HD51-TE84L	
R906	1-216-121-00	METAL GLAZE 1M 5% 1/10W		D902	8-719-812-41	DIODE TLR124	
R908	1-216-097-00	METAL GLAZE 100K 5% 1/10W			*****		
R909	1-216-113-00	METAL GLAZE 470K 5% 1/10W					
R910	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W					

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7061-599-A	CO-2P BOARD, COMPLETE (Ref.No 6,000 Series)	***** (AEP/UK MODEL)		C404	1-126-206-11	ELECT CHIP 100MF	20% 6.3V
				C405	1-126-603-11	ELECT CHIP 4.7MF	20% 35V
				C406	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
				C407	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
				C408	1-162-638-11	CERAMIC CHIP 1MF	16V
*A-7061-689-A	CO-2P BOARD, COMPLETE (Ref.No 6,000 Series)	***** (E/Australian MODEL)		C409	1-126-206-11	ELECT CHIP 100MF	20% 6.3V
				C410	1-126-207-11	ELECT CHIP 33MF	20% 4V
				C411	1-126-207-11	ELECT CHIP 33MF	20% 4V
				C412	1-162-638-11	CERAMIC CHIP 1MF	16V (E/Australian)
				C413	1-162-638-11	CERAMIC CHIP 1MF	16V
				C414	1-126-205-11	ELECT CHIP 47MF	20% 6.3V
				C415	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
				C416	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
				C417	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
				C418	1-126-206-11	ELECT CHIP 100MF	20% 6.3V
				C420	1-162-638-11	CERAMIC CHIP 1MF	16V
				C421	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
				C501	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C503	1-163-098-00	CERAMIC CHIP 16PF	5% 50V
				C504	1-163-098-00	CERAMIC CHIP 16PF	5% 50V
				C505	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C506	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C507	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C508	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C509	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C510	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C511	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C512	1-126-204-11	ELECT CHIP 47MF	20% 16V
				C513	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V
				C514	1-136-718-11	FILM 0.1MF	5% 25V
				C515	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
				C516	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C517	1-163-077-00	CERAMIC CHIP 0.1MF	50V
				C518	1-126-601-11	ELECT CHIP 2.2MF	20% 50V
				C519	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C520	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C521	1-126-193-11	ELECT CHIP 1MF	20% 50V
				C522	1-126-193-11	ELECT CHIP 1MF	20% 50V
				C523	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C524	1-126-193-11	ELECT CHIP 1MF	20% 50V
				C525	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C526	1-126-204-11	ELECT CHIP 47MF	20% 16V
				C527	1-127-506-81	ELECT(SOLID) 1MF	20% 25V
				C528	1-126-602-11	ELECT CHIP 3.3MF	20% 50V
				C529	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C530	1-163-077-00	CERAMIC CHIP 0.1MF	10% 25V
				C531	1-163-077-00	CERAMIC CHIP 0.1MF	10% 25V
				C532	1-163-077-00	CERAMIC CHIP 0.1MF	10% 25V
				C533	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C534	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C535	1-124-779-00	ELECT CHIP 10MF	20% 16V
				C536	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C537	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C101	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C102	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C103	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C104	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C105	1-163-109-00	CERAMIC CHIP 47PF	5% 50V				
C106	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C107	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C108	1-163-123-00	CERAMIC CHIP 180PF	5% 50V				
C109	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V				
C110	1-124-778-00	ELECT CHIP 22MF	20% 6.3V				
C111	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C112	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C113	1-164-633-91	CERAMIC CHIP 0.1MF	10% 25V				
C114	1-164-633-91	CERAMIC CHIP 0.1MF	10% 25V				
C115	1-164-633-91	CERAMIC CHIP 0.1MF	10% 25V				
C116	1-164-633-91	CERAMIC CHIP 0.1MF	10% 25V				
C117	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C118	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C119	1-124-778-00	ELECT CHIP 22MF	20% 6.3V				
C123	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C124	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C125	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V				
C126	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C131	1-163-117-00	CERAMIC CHIP 100PF	5% 50V				
C132	1-163-121-00	CERAMIC CHIP 150PF	5% 50V				
C133	1-163-117-00	CERAMIC CHIP 100PF	5% 50V				
C134	1-163-117-00	CERAMIC CHIP 100PF	5% 50V				
C135	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C136	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C138	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V				
C139	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C140	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C141	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V				
C142	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C145	1-124-778-00	ELECT CHIP 22MF	20% 6.3V				
C148	1-163-007-11	CERAMIC CHIP 680PF	10% 50V				
C149	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C160	1-124-778-00	ELECT CHIP 22MF	20% 6.3V				
C161	1-126-204-11	ELECT CHIP 47MF	20% 16V				
C162	1-163-133-00	CERAMIC CHIP 470PF	5% 50V				
C163	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V				
C165	1-124-778-00	ELECT CHIP 22MF	20% 6.3V				
C166	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C401	1-126-601-11	ELECT CHIP 2.2MF	20% 50V				
C403	1-126-206-11	ELECT CHIP 100MF	20% 6.3V				

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C538	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C632	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V
C539	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C633	1-135-149-21	TANTAL. CHIP 2.2MF	20% 6.3V
C540	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	CONNECTOR			
C541	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	CN101	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
C542	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	CN102	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P	
C543	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	CN501	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
C544	1-162-638-11	CERAMIC CHIP 1MF	16V	CN502	1-566-531-11	CONNECTOR, FPC (ZIF) 15P	
C545	1-162-638-11	CERAMIC CHIP 1MF	16V	CN503	1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P	
C546	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	CN504	1-565-529-21	PIN, CONNECTOR (PC BOARD) 4P	
C548	1-163-035-00	CERAMIC CHIP 0.047MF	50V	CN505	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
C549	1-163-081-00	CERAMIC CHIP 0.22MF	25V	CN506	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	
C550	1-164-161-11	CERAMIC CHIP 0.0022MF	50V	CN507	1-566-528-11	CONNECTOR, FPC (ZIF) 12P	
C551	1-163-023-00	CERAMIC CHIP 0.015MF	50V	DIODE			
C552	1-162-638-11	CERAMIC CHIP 1MF	16V	D401	8-719-106-09	DIODE RD6.2M-B3	
C553	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	D504	8-719-400-18	DIODE MA152WK	
C554	1-164-232-11	CERAMIC CHIP 0.01MF	50V	D505	8-719-400-18	DIODE MA152WK	
C555	1-163-125-00	CERAMIC CHIP 220PF	10% 50V	D621	8-719-938-75	DIODE SB05-05CP	
C556	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	D622	8-719-938-75	DIODE SB05-05CP	
C557	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	D623	8-719-104-34	DIODE 1S2835	
C558	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V	FILTER			
C559	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V	FL401	1-236-145-11	FILTER, BAND PASS	
C560	1-162-638-11	CERAMIC CHIP 1MF	16V	FL401	1-236-145-11	FILTER, BAND PASS	
C561	1-163-135-00	CERAMIC CHIP 560PF	5% 50V	IC			
C562	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	IC101	8-752-033-38	IC CXA1202R	
C563	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V	IC401	8-741-150-51	IC SBX1505-21	
C564	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	IC501	8-752-811-52	IC CXP80116-624Q	
C565	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V	IC502	8-759-990-78	IC S-81350AG-REG	
C566	1-163-038-00	CERAMIC CHIP 0.1MF	25V	IC503	8-759-974-21	IC S-8054ALRS-LN	
C567	1-164-005-11	CERAMIC CHIP 0.47MF	25V	IC504	8-759-804-72	IC LB1631M	
C570	1-164-633-91	CERAMIC CHIP 0.1MF	10% 25V	IC505	8-759-100-94	IC UPC358G2	
C573	1-164-247-11	CERAMIC CHIP 0.047MF	10% 16V	IC506	8-759-107-68	IC CX20115A	
C574	1-162-638-11	CERAMIC CHIP 1MF	16V	IC507	8-759-202-45	IC CX20114	
C576	1-162-638-11	CERAMIC CHIP 1MF	16V	IC508	8-759-805-06	IC CXA1127M	
C577	1-164-633-91	CERAMIC CHIP 0.1MF	10% 25V	IC509	8-752-209-53	IC CXA1204Q	
C578	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	IC510	8-759-100-95	IC UPC324G2	
C579	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	IC621	8-759-945-17	IC MB3775PF	
C580	1-162-638-11	CERAMIC CHIP 1MF	16V	COIL			
C581	1-135-092-21	TANTAL. CHIP 3.3MF	20% 16V	L101	1-408-777-00	INDUCTOR CHIP 10UH	
C582	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	L102	1-412-033-11	INDUCTOR CHIP 220UH	
C590	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	L103	1-412-029-11	INDUCTOR CHIP 10UH	
C591	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	L104	1-412-033-11	INDUCTOR CHIP 220UH	
C617	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	L105	1-412-033-11	INDUCTOR CHIP 220UH	
C621	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L106	1-412-033-11	INDUCTOR CHIP 220UH	
C622	1-163-123-00	CERAMIC CHIP 180PF	5% 50V	L107	1-412-033-11	INDUCTOR CHIP 220UH	
C623	1-163-038-00	CERAMIC CHIP 0.1MF	25V	L501	1-412-031-11	INDUCTOR CHIP 47UH	
C624	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	L502	1-412-031-11	INDUCTOR CHIP 47UH	
C625	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	L503	1-408-795-21	INDUCTOR CHIP 330UH	
C626	1-127-489-81	ELECT(SOLID) 10MF	20% 10V				
C627	1-124-638-11	ELECT 22MF	20% 10V				
C628	1-163-095-00	CERAMIC CHIP 12PF	5% 50V				
C629	1-163-101-00	CERAMIC CHIP 22PF	5% 50V				
C630	1-127-489-81	ELECT(SOLID) 10MF	20% 10V				
C631	1-163-038-00	CERAMIC CHIP 0.1MF	25V				

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description
L504	1-412-032-11	INDUCTOR CHIP 100UH
L505	1-412-030-11	INDUCTOR CHIP 22UH
L506	1-412-032-11	INDUCTOR CHIP 100UH
L621	1-410-690-11	COIL, CHOKE 22UH
L622	1-410-626-11	COIL, CHOKE 47UH
L623	1-410-626-11	COIL, CHOKE 47UH

IC LINK

PS502	1-532-605-00	LINK, IC ICP-N10 (0.4A)
PS503	1-532-685-00	LINK, IC ICP-N20 (0.8A)

TRANSISTOR

Q102	8-729-100-66	TRANSISTOR 2SC1623
Q108	8-729-901-06	TRANSISTOR DTA144EK
Q109	8-729-100-66	TRANSISTOR 2SC1623
Q110	8-729-100-66	TRANSISTOR 2SC1623
Q112	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q113	8-729-216-22	TRANSISTOR 2SA1162
Q114	8-729-901-01	TRANSISTOR DTC144EK
Q115	8-729-901-06	TRANSISTOR DTA144EK
Q116	8-729-901-06	TRANSISTOR DTA144EK
Q401	8-729-100-66	TRANSISTOR 2SC1623
Q402	8-729-100-66	TRANSISTOR 2SC1623
Q403	8-729-901-06	TRANSISTOR DTA144EK
Q404	8-729-901-01	TRANSISTOR DTC144EK
Q405	8-729-901-06	TRANSISTOR DTA144EK
Q406	8-729-100-66	TRANSISTOR 2SC1623
Q503	8-729-805-39	TRANSISTOR 2SC3898
Q504	8-729-805-39	TRANSISTOR 2SC3898
Q506	8-729-216-22	TRANSISTOR 2SA1162
Q507	8-729-216-22	TRANSISTOR 2SA1162
Q515	8-729-216-22	TRANSISTOR 2SA1162
Q516	8-729-100-66	TRANSISTOR 2SC1623
Q517	8-729-100-66	TRANSISTOR 2SC1623
Q518	8-729-100-66	TRANSISTOR 2SC1623
Q519	8-729-100-66	TRANSISTOR 2SC1623
Q520	8-729-104-95	TRANSISTOR 2SB1040A-5
Q521	8-729-100-66	TRANSISTOR 2SC1623
Q522	8-729-216-22	TRANSISTOR 2SA1162
Q524	8-729-100-66	TRANSISTOR 2SC1623
Q525	8-729-100-66	TRANSISTOR 2SC1623
Q526	8-729-216-22	TRANSISTOR 2SA1162
Q527	8-729-100-66	TRANSISTOR 2SC1623
Q528	8-729-216-22	TRANSISTOR 2SA1162
Q529	8-729-100-66	TRANSISTOR 2SC1623
Q530	8-729-216-22	TRANSISTOR 2SA1162
Q531	8-729-216-22	TRANSISTOR 2SA1162
Q532	8-729-216-22	TRANSISTOR 2SA1162
Q533	8-729-216-22	TRANSISTOR 2SA1162
Q534	8-729-901-01	TRANSISTOR DTC144EK
Q535	8-729-901-01	TRANSISTOR DTC144EK
Q536	8-729-805-39	TRANSISTOR 2SC3898

Remark	Ref.No	Part No.	Description	Remark
	Q537	8-729-216-22	TRANSISTOR 2SA1162	
	Q538	8-729-100-66	TRANSISTOR 2SC1623	
	Q539	8-729-100-66	TRANSISTOR 2SC1623	
	Q540	8-729-100-66	TRANSISTOR 2SC1623	
	Q621	8-729-901-00	TRANSISTOR DTC124EK	
	Q622	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q623	8-729-805-25	TRANSISTOR 2SB1121	
	Q624	8-729-901-01	TRANSISTOR DTC144EK	
	Q625	8-729-901-04	TRANSISTOR DTA114EK	
	Q626	8-729-100-67	TRANSISTOR 2SC1623-L7	
	Q627	8-729-805-25	TRANSISTOR 2SB1121	
	Q628	8-729-100-66	TRANSISTOR 2SC1623	
	Q629	8-729-100-66	TRANSISTOR 2SC1623	
	<u>RESISTOR</u>			
	R102	1-216-101-00	METAL GLAZE 150K 5%	1/10W
	R103	1-216-041-00	METAL GLAZE 470 5%	1/10W
	R104	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
	R106	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
	R110	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R113	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
	R114	1-216-083-00	METAL GLAZE 27K 5%	1/10W
	R115	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R116	1-216-085-00	METAL GLAZE 33K 5%	1/10W
	R117	1-216-085-00	METAL GLAZE 33K 5%	1/10W
	R118	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R119	1-216-083-00	METAL GLAZE 27K 5%	1/10W
	R120	1-216-085-00	METAL GLAZE 33K 5%	1/10W
	R121	1-216-077-00	METAL GLAZE 15K 5%	1/10W
	R122	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
	R123	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R124	1-216-013-00	METAL GLAZE 33 5%	1/10W
	R125	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R126	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
	R127	1-216-035-00	METAL GLAZE 270 5%	1/10W
	R128	1-216-047-00	METAL GLAZE 820 5%	1/10W
	R129	1-216-089-00	METAL GLAZE 47K 5%	1/10W
	R130	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R131	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
	R132	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R133	1-216-009-00	METAL GLAZE 22 5%	1/10W
	R134	1-216-037-00	METAL GLAZE 330 5%	1/10W
	R135	1-216-041-00	METAL GLAZE 470 5%	1/10W
	R136	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R137	1-216-081-00	METAL GLAZE 22K 5%	1/10W
	R139	1-216-043-00	METAL GLAZE 560 5%	1/10W
	R140	1-216-041-00	METAL GLAZE 470 5%	1/10W
	R141	1-216-097-00	METAL GLAZE 100K 5%	1/10W
	R143	1-216-095-00	METAL GLAZE 82K 5%	1/10W
	R150	1-216-089-00	METAL GLAZE 47K 5%	1/10W
	R151	1-216-101-00	METAL GLAZE 150K 5%	1/10W
	R155	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
	R156	1-216-041-00	METAL GLAZE 470 5%	1/10W

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark	Ref.No	Part No.	Description				Remark
R157	1-216-085-00	METAL GLAZE	33K	5%	1/10W		R530	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R158	1-216-039-00	METAL GLAZE	390	5%	1/10W		R531	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R160	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W		R532	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R161	1-216-013-00	METAL GLAZE	33	5%	1/10W		R533	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R401	1-216-041-00	METAL GLAZE	470	5%	1/10W		R534	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R402	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R535	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R403	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R536	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R404	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W		R537	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R405	1-216-081-00	METAL GLAZE	22K	5%	1/10W		R538	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R407	1-216-081-00	METAL GLAZE	22K	5%	1/10W		R539	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R408	1-216-081-00	METAL GLAZE	22K	5%	1/10W		R540	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R409	1-216-121-00	METAL GLAZE	1M	5%	1/10W		R541	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R410	1-216-011-00	METAL GLAZE	27	5%	1/10W		R542	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R411	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R543	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R415	1-216-085-00	METAL GLAZE	33K	5%	1/10W		R544	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R416	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W		R545	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R417	1-216-089-00	METAL GLAZE	47K	5%	1/10W	(E/Australian)	R546	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R418	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	(E/Australian)	R547	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R419	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W		R548	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R421	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W		R549	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R422	1-216-049-00	METAL GLAZE	1K	5%	1/10W		R550	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R423	1-216-049-00	METAL GLAZE	1K	5%	1/10W		R551	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R430	1-216-295-00	METAL GLAZE	0	5%	1/10W		R552	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R431	1-216-295-00	METAL GLAZE	0	5%	1/10W		R553	1-216-106-00	METAL GLAZE	240K	5%	1/10W	
R501	1-216-295-00	METAL GLAZE	0	5%	1/10W		R554	1-216-182-00	METAL GLAZE	220	5%	1/8W	
R502	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R555	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R503	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R556	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R504	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R557	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R505	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R558	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R506	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R559	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R507	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R560	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R508	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R561	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R509	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R562	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R510	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R563	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R511	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R564	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R512	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R565	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R513	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R566	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R514	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R567	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R515	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R568	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R516	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R570	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R517	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R571	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R518	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R572	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R519	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R574	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R520	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R575	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R521	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R576	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R522	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R577	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R523	1-216-073-00	METAL GLAZE	10K	5%	1/10W		R578	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R524	1-216-097-00	METAL GLAZE	100K	5%	1/10W		R579	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R525	1-216-691-11	METAL CHIP	47K	0.50%	1/10W		R580	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R526	1-216-691-11	METAL CHIP	47K	0.50%	1/10W		R581	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R528	1-216-117-00	METAL GLAZE	680K	5%	1/10W		R582	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
							R583	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
							R584	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R585	1-216-041-00	METAL GLAZE 470 5%	1/10W
R586	1-216-041-00	METAL GLAZE 470 5%	1/10W
R587	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R588	1-216-748-11	METAL GLAZE 39K 5%	1/10W
R589	1-216-043-00	METAL GLAZE 560 5%	1/10W
R590	1-216-035-00	METAL GLAZE 270 5%	1/10W
R591	1-216-031-00	METAL GLAZE 180 5%	1/10W
R592	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R593	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R594	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R595	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R596	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R597	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R598	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R599	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R600	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R601	1-216-047-00	METAL GLAZE 820 5%	1/10W
R602	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R603	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R604	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R605	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R606	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R607	1-216-025-00	METAL GLAZE 100 5%	1/10W
R608	1-216-027-00	METAL GLAZE 120 5%	1/10W
R609	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R610	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R611	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R612	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R613	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R614	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R615	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R616	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R617	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R618	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R619	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R620	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R621	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R622	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R623	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R624	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R625	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R626	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R627	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R628	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R629	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R630	1-216-045-00	METAL GLAZE 680 5%	1/10W
R631	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R632	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R633	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R634	1-216-033-00	METAL GLAZE 220 5%	1/10W
R635	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R636	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R637	1-216-045-00	METAL GLAZE 680 5%	1/10W

Ref.No	Part No.	Description	Remark
R638	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R639	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R640	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R641	1-216-136-00	METAL GLAZE 2.7 5%	1/8W
R642	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R643	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R644	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R645	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R652	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R653	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R654	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R655	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R656	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R659	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R660	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R661	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R663	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R664	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R665	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R666	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R667	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R668	1-216-041-00	METAL GLAZE 470 5%	1/10W
R669	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R670	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R681	1-216-097-00	METAL GLAZE 100K 5%	1/10W

VARIABLE RESISTOR

RV101	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV102	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV501	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV551	1-238-225-11	RES, ADJ, METAL GLAZE 47K
RV621	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K

CONNECTOR

W501	1-574-451-11	CABLE, FLAT (1.0MM PITCH) 22P
W501	1-574-467-11	CABLE, FLAT (1.0MM PITCH) 22P
W502	1-574-451-11	CABLE, FLAT (1.0MM PITCH) 22P
W502	1-574-467-11	CABLE, FLAT (1.0MM PITCH) 22P

CRYSTAL

X501	1-577-116-11	VIBRATOR, CRYSTAL (16MHz)
X502	1-567-699-11	VIBRATOR, CRYSTAL (5.9MHz)

*A-7062-012-A VF-22P BOARD, COMPLETE (Ref.No 4,000 Series)

*3-674-372-00 HOLDER (A), LED

CAPACITOR

C901	1-126-369-11	ELECT 220MF	20%	6.3V
C902	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C904	1-127-486-11	ELECT(SOLID) 47MF	20%	6.3V
C905	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V

When indicating parts by reference number, please include the board name.

VF-22P

LD-17P

CD-40P

Ref.No	Part No.	Description	Remark
C906	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C907 Δ	1-162-625-11	CERAMIC CHIP 0.0047MF	5% 50V
C908 Δ	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C909	1-126-193-11	ELECT CHIP 1MF	20% 50V
C911	1-131-394-21	TANTALUM 68MF	10% 3.15V
C912	1-102-038-00	CERAMIC 0.001MF	500V
C913	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C915	1-126-193-11	ELECT CHIP 1MF	20% 50V
C916	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C917	1-135-166-21	TANTAL. CHIP 47MF	20% 6.3V
C918	1-162-638-11	CERAMIC CHIP 1MF	16V
C919	1-135-070-00	TANTAL. CHIP 0.1MF	10% 35V
C920	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V

CONNECTOR

CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P
CN904	*1-566-759-11	PIN, CONNECTOR (PC BOARD) 4P

COMPOSITION CIRCUIT BLOCK

CP901	1-238-119-11	RES, ADJ
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SOCKET ASSY

CRT901	1-526-978-21	SOCKET ASSY, CRT
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DIODE

D903	8-719-400-20	DIODE MA152WA
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IC

IC901	8-759-420-01	IC AN2512S
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COIL

L901	1-408-421-00	INDUCTOR 100UH
L902	1-410-385-11	INDUCTOR CHIP 22UH
L903 Δ	1-459-858-11	COIL, FERRITE (HLC)

TRANSISTOR

Q903	8-729-106-68	TRANSISTOR 2SD1615A-GP
Q904	8-729-216-31	TRANSISTOR 2SA1163G

RESISTOR

R902	1-216-051-00	METAL GLAZE 1.2K	5%	1/10W
R903	1-216-041-00	METAL GLAZE 470	5%	1/10W
R907	1-216-063-00	METAL GLAZE 3.9K	5%	1/10W
R908	1-216-063-00	METAL GLAZE 3.9K	5%	1/10W
R909	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W
R911	1-216-079-00	METAL GLAZE 18K	5%	1/10W
R912	1-216-295-00	METAL GLAZE 0	5%	1/10W
R913	1-216-295-00	METAL GLAZE 0	5%	1/10W
R914	1-216-133-00	METAL GLAZE 3.3M	5%	1/10W
R915	1-216-133-00	METAL GLAZE 3.3M	5%	1/10W

Ref.No	Part No.	Description	Remark
R916	1-216-125-00	METAL GLAZE 1.5M	5% 1/10W
R917	1-216-121-00	METAL GLAZE 1M	5% 1/10W
R919	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R920	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R921	1-216-013-00	METAL GLAZE 33	5% 1/10W
R922	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R923	1-216-025-00	METAL GLAZE 100	5% 1/10W
R924	1-216-306-11	METAL GLAZE 3.9	5% 1/10W
R925	1-216-336-11	METAL GLAZE 47K	1% 1/10W
R926	1-216-107-00	METAL GLAZE 270K	1% 1/10W
R928	1-216-870-11	METAL GLAZE 180K	1% 1/10W
R929	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R930	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R931	1-216-121-00	METAL GLAZE 1M	5% 1/10W
R950	1-216-311-00	METAL GLAZE 6.8	5% 1/10W

VARIABLE RESISTOR

RV901	1-238-647-11	RES, ADJ, METAL GLAZE 4.7M
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TRANSFORMER

T901	1-439-428-13	TRANSFORMER ASSY, FLYBACK
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THERMISTOR

TH901	1-807-938-11	THERMISTOR
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*1-630-067-21 LD-17P BOARD (Ref.No 5,000 Series)

DIODE

D901	8-719-941-34	DIODE GL1HD51-TE84L
D902	8-719-812-41	DIODE TLR124

*A-7062-197-A CD-40P BOARD, COMPLETE (Ref.No 1,000 Series)

3-831-441-XX CUSHION

CAPACITOR

C601	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C602	1-126-607-11	ELECT CHIP 47MF	20%	4V
C603	1-126-193-11	ELECT CHIP 1MF	20%	50V
C604	1-126-397-11	ELECT CHIP 33MF	20%	25V
C605	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C607	1-163-016-00	CERAMIC CHIP 0.0039MF	10%	50V
C613	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C614	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C615	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C617	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C619	1-126-405-11	ELECT CHIP 10MF	20%	50V
C620	1-163-036-00	CERAMIC CHIP 0.068MF		50V

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C621	1-164-161-11	CERAMIC CHIP 0.0022MF 10%	50V
C622	1-164-161-11	CERAMIC CHIP 0.0022MF 10%	50V

CONNECTOR

CN601	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
CN602	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
CN603	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
CN604	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P	
CN605	1-568-164-11	CONNECTOR, FPC (1.0MM) (ZIF) 8P	

DIODE

D601	8-719-104-31	DIODE MA152WK	
D602	8-719-104-34	DIODE 1S2836	
D603	8-719-104-31	DIODE MA152WK	
D604	8-719-104-31	DIODE MA152WK	

IC

IC601	8-752-604-51	CCD IMAGER ICX045AK-1	
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COIL

L601	1-410-393-11	INDUCTOR CHIP 100UH	
L602	1-410-393-11	INDUCTOR CHIP 100UH	

TRANSISTOR

Q601	8-765-420-03	TRANSISTOR 2SK300-4	
Q602	8-729-100-66	TRANSISTOR 2SC1623	
Q603	8-729-100-66	TRANSISTOR 2SC1623	
Q604	8-729-100-66	TRANSISTOR 2SC1623	
Q605	8-729-100-66	TRANSISTOR 2SC1623	
Q606	8-729-216-22	TRANSISTOR 2SA1162	
Q607	8-729-104-26	TRANSISTOR 2SB804	
Q608	8-729-103-72	TRANSISTOR 2SD1005	
Q609	8-729-216-22	TRANSISTOR 2SA1162	
Q610	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

R601	1-216-025-00	METAL GLAZE 100 5%	1/10W
R602	1-216-045-00	METAL GLAZE 680 5%	1/10W
R603	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R604	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R605	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R606	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R609	1-216-091-00	METAL GLAZE 56K 5%	1/10W
R610	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R611	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R612	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R613	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R614	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R615	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R616	1-216-005-00	METAL GLAZE 15 5%	1/10W
R617	1-216-005-00	METAL GLAZE 15 5%	1/10W
R618	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R619	1-216-085-00	METAL GLAZE 33K 5%	1/10W

Ref.No	Part No.	Description	Remark
R620	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R621	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R622	1-216-073-00	METAL GLAZE 10K 5%	1/10W

CONNECTOR

W601	1-575-151-11	CABLE, FLAT (1.0MM PITCH)	
W603	1-575-063-11	CABLE, FLAT (1.0MM PITCH) 14P	

*A-7062-198-A CC-51P BOARD, COMPLETE

CAPACITOR

C001	1-162-638-11	CERAMIC CHIP 1MF	16V
C002	1-162-638-11	CERAMIC CHIP 1MF	16V
C003	1-163-038-00	CERAMIC CHIP 0.1MF	25V

CONNECTOR

CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	

DIODE

D001	8-719-104-31	DIODE MA152WK	
D002	8-719-104-31	DIODE MA152WK	
D003	8-719-104-31	DIODE MA152WK	

IC

IC001	8-759-100-93	IC UPC393G2	
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TRANSISTOR

Q002	8-729-903-30	TRANSISTOR DTC144TK	
Q004	8-729-903-30	TRANSISTOR DTC144TK	
Q005	8-729-903-30	TRANSISTOR DTC144TK	
Q006	8-729-900-53	TRANSISTOR DTC114EK	

RESISTOR

R001	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R002	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R003	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R004	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R005	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R006	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R007	1-216-174-00	METAL GLAZE 100 5%	1/8W
R008	1-216-041-00	METAL GLAZE 470 5%	1/10W
R009	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R010	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R011	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R012	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R013	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R014	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R015	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R016	1-216-097-00	METAL GLAZE 100K 5%	1/10W

When indicating parts by reference number, please include the board name.

CC-51P

CK-43P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<u>CONNECTOR</u>							
W501	1-574-458-11	CABLE, FLAT (1.0MM PITCH) 13P		Q661	8-729-216-22	TRANSISTOR 2SA1162G	
W501	1-574-471-11	CABLE, FLAT (1.0MM PITCH) 13P		Q662	8-729-902-XX	TRANSISTOR DTC114TK	
*****				Q663	8-729-902-XX	TRANSISTOR DTC114TK	
				Q664	8-729-216-22	TRANSISTOR 2SA1162G	
				Q665	8-729-901-01	TRANSISTOR DTC144EK	
				<u>RESISTOR</u>			
*A-7062-200-A CK-43P BOARD, COMPLETE (Ref.No 4,000 Series)				R651	1-216-097-00	METAL GLAZE 100K 5%	1/10W
*****				R652	1-216-073-00	METAL GLAZE 10K 5%	1/10W
3-712-410-01 HOLDER, RS				R653	1-216-097-00	METAL GLAZE 100K 5%	1/10W
<u>CAPACITOR</u>				R654	1-216-073-00	METAL GLAZE 10K 5%	1/10W
C651	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	R655	1-216-097-00	METAL GLAZE 100K 5%	1/10W
C652	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R656	1-216-073-00	METAL GLAZE 10K 5%	1/10W
C653	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R657	1-216-097-00	METAL GLAZE 100K 5%	1/10W
C654	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	R658	1-216-073-00	METAL GLAZE 10K 5%	1/10W
C655	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V	R659	1-216-097-00	METAL GLAZE 100K 5%	1/10W
C656	1-135-149-21	TANTAL. CHIP 2.2MF	20% 10V	R660	1-216-097-00	METAL GLAZE 100K 5%	1/10W
C657	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	R661	1-216-097-00	METAL GLAZE 100K 5%	1/10W
C658	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R662	1-216-097-00	METAL GLAZE 100K 5%	1/10W
C659	1-162-638-11	CERAMIC CHIP 1MF	16V	R663	1-216-089-00	METAL GLAZE 47K 5%	1/10W
C660	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	R664	1-216-093-00	METAL GLAZE 68K 5%	1/10W
<u>TRIMMER</u>				R665	1-216-085-00	METAL GLAZE 33K 5%	1/10W
CV651	1-141-368-11	CAP, CHIP TRIMMER 30PF		R666	1-216-025-00	METAL GLAZE 100 5%	1/10W
<u>DIODE</u>				R667	1-216-129-00	METAL GLAZE 2.2M 5%	1/10W
D651	8-719-938-72	DIODE SB01-05CP		R668	1-216-097-00	METAL GLAZE 100K 5%	1/10W
D652	8-719-801-48	DIODE 1SS193		R669	1-216-105-00	METAL GLAZE 220K 5%	1/10W
D653	8-719-104-31	DIODE MA152WK		R670	1-216-246-00	METAL GLAZE 100K 5%	1/8W
D654	8-719-104-31	DIODE MA152WK		R671	1-216-109-00	METAL GLAZE 330K 5%	1/10W
D657	8-719-104-31	DIODE MA152WK		R672	1-216-097-00	METAL GLAZE 100K 5%	1/10W
D658	8-719-801-48	DIODE 1SS193		R673	1-216-097-00	METAL GLAZE 100K 5%	1/10W
D660	8-719-939-11	DIODE GP2S09-B		R674	1-216-097-00	METAL GLAZE 100K 5%	1/10W
<u>IC</u>				R675	1-216-097-00	METAL GLAZE 100K 5%	1/10W
IC651	8-759-149-19	IC UPD7508BGB-516		R676	1-216-109-00	METAL GLAZE 330K 5%	1/10W
<u>COIL</u>				R677	1-216-121-00	METAL GLAZE 1M 5%	1/10W
L651	1-410-391-11	INDUCTOR CHIP 68UH		R678	1-218-172-11	METAL GLAZE 680K 1%	1/10W
<u>TRANSISTOR</u>				R679	1-216-121-00	METAL GLAZE 1M 5%	1/10W
Q651	8-729-901-03	TRANSISTOR DTC144WK		R680	1-218-172-11	METAL GLAZE 680K 1%	1/10W
Q652	8-729-216-22	TRANSISTOR 2SA1162G		R681	1-216-097-00	METAL GLAZE 100K 1%	1/10W
Q653	8-729-901-03	TRANSISTOR DTC144WK		R682	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q654	8-729-220-93	TRANSISTOR 2SK209G		R683	1-216-109-00	METAL GLAZE 330K 5%	1/10W
Q655	8-729-216-22	TRANSISTOR 2SA1162G		R684	1-216-097-00	METAL GLAZE 100K 5%	1/10W
Q656	8-729-216-22	TRANSISTOR 2SA1162G		R685	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q657	8-729-216-22	TRANSISTOR 2SA1162G		R686	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q658	8-729-100-66	TRANSISTOR 2SC1623		R687	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q659	8-729-100-66	TRANSISTOR 2SC1623		R688	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q660	8-729-216-22	TRANSISTOR 2SA1162G		R689	1-216-097-00	METAL GLAZE 100K 5%	1/10W
				R690	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R691	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R692	1-216-097-00	METAL GLAZE 100K 5%	1/10W
				R693	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R695	1-216-025-00	METAL GLAZE 100 5%	1/10W
				R696	1-216-097-00	METAL GLAZE 100K 5%	1/10W
				R697	1-216-296-00	METAL GLAZE 0 5%	1/8W

When indicating parts by reference number, please include the board name.

CK - 43P

DK - 10P

MA - 66P

Ref.No	Part No.	Description	Remark
R698	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R699	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R700	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R701	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R702	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R703	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R704	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R705	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R706	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R707	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R708	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R709	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R710	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R712	1-216-295-00	METAL GLAZE 0 5% 1/10W	

VARIABLE RESISTOR

RV651 1-230-874-11 RES, ADJ, METAL GLAZE 100K

SWITCH

S652 1-572-078-11 SWITCH, TACTILE (SUTTER SPEED)
 S653 1-572-078-11 SWITCH, TACTILE (BACK LIGHT)
 S654 1-572-078-11 SWITCH, TACTILE (WHITE BAL)
 S655 1-572-078-11 SWITCH, TACTILE (FOCUS)
 S658 1-572-078-11 SWITCH, TACTILE (DATE +)
 S659 1-572-078-11 SWITCH, TACTILE (TIME NEXT)

CRYSTAL

X651 1-527-997-21 VIBRATOR, CRYSTAL (32.768KHz)

*1-634-186-21 DK-10P BOARD (Ref.No 5,000 Series)

DIODE

D691 8-719-801-48 DIODE 1SS193-TE85L
 D692 8-719-104-31 DIODE MA152WK

SWITCH

S691 1-572-078-11 SWITCH, TACTILE (EDITSEARCH +)
 S692 1-572-078-11 SWITCH, TACTILE (EDITSEARCH -)
 S693 1-572-078-11 SWITCH, TACTILE (COUNTER RESET)
 S694 1-572-078-11 SWITCH, TACTILE (ZERO MEMO)

CONNECTOR

W652 1-575-062-11 CABLE, FLAT (1.0MM PITCH) 6P

Ref.No	Part No.	Description	Remark
*A-7062-205-A	MA-66P	BOARD, COMPLETE (Ref.No 9,000 Series)	

<u>CAPACITOR</u>			
C451	1-126-154-11	ELECT 47MF	20% 6.3V
C452	1-162-638-11	CERAMIC CHIP 1MF	16V
C453	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C455	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C456	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C457	1-163-077-00	CERAMIC CHIP 0.1MF	10% 25V
C459	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C460	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C464	1-162-638-11	CERAMIC CHIP 1MF	16V
C465	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C466	1-124-225-00	ELECT 100MF	20% 6.3V
C470	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C471	1-163-135-00	CERAMIC CHIP 560PF	5% 50V
C474	1-162-638-11	CERAMIC CHIP 1MF	16V
<u>CONNECTOR</u>			
CN451	1-565-877-11	PIN, CONNECTOR (PC BOARD) 5P	
CN452	*1-566-182-11	PIN, CONNECTOR (PC BOARD) 3P	
<u>IC</u>			
IC451	8-759-822-37	IC LA7293M-TE-L	
<u>JACK</u>			
J451	1-507-921-00	JACK (MIC)	
J452	1-563-454-11	JACK, MINIATURE (DC OUT)	
<u>TRANSISTOR</u>			
Q451	8-729-100-66	TRANSISTOR 2SC1623	
<u>RESISTOR</u>			
R451	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R452	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R453	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R455	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R456	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R459	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R460	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R462	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R465	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R467	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
<u>SWITCH</u>			
S451	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE)	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*1-634-189-21 VK-11P BOARD (Ref.No 9,000 Series)				C962	1-163-033-00	CERAMIC CHIP 0.022MF	50V
*****				C963	1-163-125-00	CERAMIC CHIP 220PF	10% 50V
<u>CONNECTOR</u>				C964	1-124-234-00	ELECT 22MF	20% 16V
CN508	*1-566-182-11	PIN, CONNECTOR (PC BOARD) 3P		C965	1-124-261-00	ELECT 10MF	20% 50V
<u>DIODE</u>				C966	1-124-261-00	ELECT 10MF	20% 50V
D501	8-719-104-31	DIODE MA152WK		C967	1-127-509-00	ELECT(SOLID) 3.3MF	20% 25V
D502	8-719-104-34	DIODE 1S2836		C968	1-124-598-11	ELECT 22MF	20% 25V
D503	8-719-104-34	DIODE 1S2836		C978	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
D504	8-719-801-41	DIODE 1SS196		C984	1-124-570-11	ELECT 220MF	20% 16V
D505	8-719-104-31	DIODE MA152WK (AEP/UK MODEL)		C985	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
<u>TRANSISTOR</u>				C988	1-164-161-11	CERAMIC CHIP 0.0022MF	50V
Q501	8-729-903-30	TRANSISTOR DTC144TK		C989	1-164-161-11	CERAMIC CHIP 0.0022MF	50V
Q502	8-729-903-30	TRANSISTOR DTC144TK		C990	1-164-161-11	CERAMIC CHIP 0.0022MF	50V
<u>SWITCH</u>				C991	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
S501	1-571-101-12	SWITCH, SLIDE (POWER)		<u>CONNECTOR</u>			
S502	1-572-078-11	SWITCH, TACTILE (REW ◀)		CN901	1-506-481-11	PIN, CONNECTOR 2P	
S503	1-572-078-11	SWITCH, TACTILE (PB ▷)		<u>DIODE</u>			
S504	1-572-078-11	SWITCH, TACTILE (FF ▶)		D935	1-8-719-106-71	DIODE RD12M-B2	
S505	1-572-078-11	SWITCH, TACTILE (■ STOP)		D936	8-719-800-76	DIODE 1SS226	
S506	1-572-078-11	SWITCH, TACTILE (■ PAUSE)		D937	8-719-800-76	DIODE 1SS226	
S507	1-571-102-21	SWITCH, SLIDE (REC) (E/Australian)		D938	8-719-510-11	DIODE D1FS4	
S508	1-571-102-11	SWITCH, SLIDE (EJECT)		D939	8-719-801-48	DIODE 1SS193	
S509	1-572-078-11	SWITCH, TACTILE (DATA SCREEN)		D940	8-719-801-48	DIODE 1SS193	
S510	1-553-977-00	SWITCH, SLIDE (EDIT)		D941	8-719-802-36	DIODE 1SS250	
<u>CONNECTOR</u>				D942	8-719-801-48	DIODE 1SS193	
W507	1-574-452-12	CABLE, FLAT (1.0MM PITCH) 12P		D943	8-719-801-48	DIODE 1SS193	
W507	1-574-468-11	CABLE, FLAT (1.0MM PITCH) 12P		<u>IC LINK</u>			
*****				PS901	1-532-841-21	LINK, IC PRF1600 (1.6A)	
*A-7062-202-A PS-263P BOARD, COMPLETE (Ref.No 1,000 Series)				PS902	1-532-841-21	LINK, IC PRF1600 (1.6A)	
*****				PS903	1-532-841-21	LINK, IC PRF1600 (1.6A)	
<u>CAPACITOR</u>				<u>IC</u>			
C936	1-124-438-00	ELECT 1MF	20% 50V	IC935	8-759-937-36	IC TL1451ACNS	
C937	1-124-438-00	ELECT 1MF	20% 50V	<u>JACK</u>			
C938	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	J901	1-537-241-11	TERMINAL BOARD (BATTERY)	
C939	1-124-438-00	ELECT 1MF	20% 50V	<u>COIL</u>			
C940	1-164-161-11	CERAMIC CHIP 0.0022MF	50V	L935	1-410-690-11	COIL, CHOKE 22UH	
C941	1-127-489-81	ELECT(SOLID) 10MF	20% 10V	L937	1-421-918-11	COIL, CHOKE 10UH	
C942	1-163-125-00	CERAMIC CHIP 220PF	10% 50V	L938	1-410-626-11	COIL, CHOKE 47UH	
C943	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	L939	1-410-626-11	COIL, CHOKE 47UH	
C944	1-127-561-11	ELECT(SOLID) 33MF	20% 10V	L940	1-410-828-31	INDUCTOR 47UH	
C945	1-162-637-11	CERAMIC CHIP 0.47MF	16V	L942	1-410-626-11	COIL, CHOKE 47UH	
C955	1-127-489-81	ELECT(SOLID) 10MF	20% 10V	L944	1-410-385-11	INDUCTOR CHIP 22UH	
C957	1-124-589-11	ELECT 47MF	20% 10V	L946	1-421-918-11	COIL, CHOKE 10UH	
C958	1-124-589-11	ELECT 47MF	20% 10V	L951	1-410-658-31	INDUCTOR CHIP 220UH	
C959	1-124-589-11	ELECT 47MF	20% 10V	L952	1-412-026-11	INDUCTOR CHIP 1UH	
C961	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	L953	1-412-026-11	INDUCTOR CHIP 1UH	

The components identified by mark **A** or dotted line with mark **A** are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
L954	1-412-026-11	INDUCTOR CHIP 1UH		R986	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
L955	1-412-026-11	INDUCTOR CHIP 1UH		R987	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
L956	1-412-026-11	INDUCTOR CHIP 1UH		R990	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
L957	1-412-026-11	INDUCTOR CHIP 1UH					
<u>TRANSISTOR</u>				<u>VARIABLE RESISTOR</u>			
Q935	8-729-901-00	TRANSISTOR DTC124EK		RV936	1-230-867-11	RES, ADJ, METAL GRAZE 1K	
Q936	8-729-901-05	TRANSISTOR DTA124EK		RV937	1-230-866-11	RES, ADJ, METAL GRAZE 470	
Q937	8-729-901-05	TRANSISTOR DTA124EK		RV938	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
Q938	8-729-901-00	TRANSISTOR DTC124EK					
Q939	8-729-901-05	TRANSISTOR DTA124EK		<u>TRANSFORMER</u>			
Q940	8-729-100-67	TRANSISTOR 2SC1623-L7		T936	1-449-454-11	TRANSFORMER, CONVERTER	
Q941	8-729-105-29	TRANSISTOR 2SB1203-S					
Q942	8-729-805-25	TRANSISTOR 2SB1121		<u>CONNECTOR</u>			
Q943	8-729-901-05	TRANSISTOR DTA124EK		W901	1-564-610-11	CONNECTOR, BOARD TO BOARD	
Q944	8-729-901-00	TRANSISTOR DTC124EK		W902	1-564-610-11	CONNECTOR, BOARD TO BOARD	
Q945	8-729-216-22	TRANSISTOR 2SA1162		*****			
Q946	8-729-216-22	TRANSISTOR 2SA1162		*A-7062-204-A	CV-9 BOARD, COMPLETE (Ref.No 2,000 Series)		
Q947	8-729-140-55	TRANSISTOR 2SK739			(AEP/UK MODEL)		
Q952	8-729-901-04	TRANSISTOR DTA114EK		*A-7062-230-A	CV-9 BOARD, COMPLETE (Ref.No 2,000 Series)		
Q953	8-729-901-01	TRANSISTOR DTC144EK			(E/Australian MODEL)		
<u>RESISTOR</u>				A-7068-128-A	MX-7 BOARD, COMPLETE (HIC)		
R935	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		A-7068-178-A	DT-79D BOARD, COMPLETE (HIC)		
R936	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W		3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD		
R937	1-216-073-00	METAL GLAZE 10K 5% 1/10W		7-627-553-48	PRECISION SCREW +P 2X4 TYPE 3		
R938	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		<u>CAPACITOR</u>			
R939	1-216-099-00	METAL GLAZE 120K 5% 1/10W		C201	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R940	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C202	1-124-779-00	ELECT CHIP 10MF 20% 16V	
R941	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C203	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R942	1-216-748-11	METAL GLAZE 39K 5% 1/10W		C204	1-124-779-00	ELECT CHIP 10MF 20% 16V	
R943	1-216-033-00	METAL GLAZE 220 5% 1/10W		C205	1-162-638-11	CERAMIC CHIP 1MF 16V	
R944	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W		C206	1-124-779-00	ELECT CHIP 10MF 20% 16V	
R945	1-216-027-00	METAL GLAZE 120 5% 1/10W		C209	1-126-205-11	ELECT CHIP 47MF 20% 6.3V	
R946	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C210	1-162-638-11	CERAMIC CHIP 1MF 16V (E/Australian)	
R947	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W		C211	1-164-247-11	CERAMIC CHIP 0.047MF 10% 16V	
R948	1-216-081-00	METAL GLAZE 22K 5% 1/10W		C212	1-162-638-11	CERAMIC CHIP 1MF 16V	
R949	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C213	1-124-779-00	ELECT CHIP 10MF 20% 16V	
R950	1-216-037-00	METAL GLAZE 330 5% 1/10W		C214	1-126-246-11	ELECT CHIP 220MF 20% 4V	
R951	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C215	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R953	1-216-099-00	METAL GLAZE 120K 5% 1/10W		C216	1-124-779-00	ELECT CHIP 10MF 20% 16V	
R954	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C217	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
R955	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C218	1-162-638-11	CERAMIC CHIP 1MF 16V	
R956	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C219	1-126-193-11	ELECT CHIP 1MF 20% 50V	
R957	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C220	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
R958	1-216-035-00	METAL GLAZE 270 5% 1/10W		C221	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
R959	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C223	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
R960	1-216-001-00	METAL GLAZE 10 5% 1/10W		C224	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
R961	1-216-085-00	METAL GLAZE 33K 5% 1/10W					
R962	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W					
R975	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W					
R978	1-216-089-00	METAL GLAZE 47K 5% 1/10W					
R985	1-216-073-00	METAL GLAZE 10K 5% 1/10W					

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C225	1-162-638-11	CERAMIC CHIP 1MF	16V	C295	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C226	1-163-077-00	CERAMIC CHIP 0.1MF	10% 25V	C296	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C227	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C298	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C228	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C300	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C229	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C301	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C230	1-162-638-11	CERAMIC CHIP 1MF	16V	C302	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C231	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C304	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
C232	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C305	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C233	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C306	1-124-778-00	ELECT CHIP 22MF	20% 6.3V
C234	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C307	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C235	1-162-638-11	CERAMIC CHIP 1MF	16V	C308	1-163-107-00	CERAMIC CHIP 39PF	5% 50V
C236	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C309	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C237	1-162-638-11	CERAMIC CHIP 1MF	16V	C310	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C238	1-135-180-21	TANTAL. CHIP 3.3MF	20% 6.3V	C311	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C239	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C312	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
C240	1-135-091-00	TANTAL. CHIP 1MF	20% 16V	C313	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C241	1-162-638-11	CERAMIC CHIP 1MF	16V	C314	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C242	1-135-091-00	TANTAL. CHIP 1MF	20% 16V	C315	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C243	1-135-091-00	TANTAL. CHIP 1MF	20% 16V	C316	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C245	1-126-100-11	ELECT 10MF	20% 6.3V	C317	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C246	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C327	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C247	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C333	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C248	1-124-779-00	ELECT CHIP 10MF	20% 16V	C334	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C249	1-124-779-00	ELECT CHIP 10MF	20% 16V	C336	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C250	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V	C343	1-163-118-00	CERAMIC CHIP 110PF	5% 50V
C251	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C350	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
C252	1-124-779-00	ELECT CHIP 10MF	20% 16V	C357	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C253	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C360	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C254	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C374	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C257	1-124-779-00	ELECT CHIP 10MF	20% 16V	C401	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C258	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C402	1-124-779-00	ELECT CHIP 10MF	20% 16V
C259	1-163-131-00	CERAMIC CHIP 390PF	5% 50V	C403	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
C260	1-124-779-00	ELECT CHIP 10MF	20% 16V	C404	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C265	1-124-779-00	ELECT CHIP 10MF	20% 16V	C407	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C269	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C409	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
C270	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C411	1-163-118-00	CERAMIC CHIP 110PF	5% 50V
C271	1-163-089-00	CERAMIC CHIP 6PF	0.25PF 50V	C413	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C273	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C414	1-124-778-00	ELECT CHIP 22MF	20% 6.3V
C274	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C415	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C275	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C416	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C276	1-124-778-00	ELECT CHIP 22MF	20% 6.3V	C417	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C277	1-162-638-11	CERAMIC CHIP 1MF	16V	C418	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C278	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C419	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C279	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C451	1-162-638-11	CERAMIC CHIP 1MF	16V
C280	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C452	1-162-638-11	CERAMIC CHIP 1MF	16V
C281	1-124-778-00	ELECT CHIP 22MF	20% 6.3V	C501	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C287	1-124-287-00	ELECT 10MF	20% 10V	C502	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C288	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C503	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C289	1-124-779-00	ELECT CHIP 10MF	20% 16V	C504	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C291	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C505	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C292	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C506	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C293	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C507	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C294	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C508	1-124-779-00	ELECT CHIP 10MF	20% 16V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark	Ref.No	Part No.	Description		Remark
C509	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C656	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C510	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	C658	1-162-638-11	CERAMIC CHIP 1MF		16V
C511	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C660	1-162-638-11	CERAMIC CHIP 1MF		16V
C512	1-163-123-00	CERAMIC CHIP 180PF	5%	50V	C661	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C513	1-163-093-00	CERAMIC CHIP 10PF	5%	50V	C662	1-162-638-11	CERAMIC CHIP 1MF		16V
C514	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	C665	1-162-638-11	CERAMIC CHIP 1MF		16V
C515	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C666	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C516	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C669	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C517	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C673	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C601	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V	C675	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C602	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	C676	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C603	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	C677	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C604	1-162-638-11	CERAMIC CHIP 1MF		16V	C678	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C605	1-162-638-11	CERAMIC CHIP 1MF		16V	C679	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C606	1-163-100-00	CERAMIC CHIP 20PF	5%	50V	C681	1-163-005-11	CERAMIC CHIP 470PF	10%	50V
C607	1-163-118-00	CERAMIC CHIP 110PF	5%	50V	C686	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C608	1-163-114-00	CERAMIC CHIP 75PF	5%	50V	C687	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C609	1-163-100-00	CERAMIC CHIP 20PF	5%	50V	C690	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C610	1-163-118-00	CERAMIC CHIP 110PF	5%	50V	C691	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C611	1-163-114-00	CERAMIC CHIP 75PF	5%	50V	C692	1-162-638-11	CERAMIC CHIP 1MF		16V
C612	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C693	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C613	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C694	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C614	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C695	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C615	1-163-097-00	CERAMIC CHIP 15PF	5%	50V	C696	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C616	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C697	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C617	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C699	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C618	1-163-093-00	CERAMIC CHIP 10PF	5%	50V	C700	1-162-638-11	CERAMIC CHIP 1MF		16V
C619	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C701	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C621	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C702	1-162-638-11	CERAMIC CHIP 1MF		16V
C622	1-163-095-00	CERAMIC CHIP 12PF	5%	50V	C703	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C623	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C704	1-124-566-11	ELECT 120MF	20%	6.3V
C624	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	C705	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C626	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C706	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C627	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	C707	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C628	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	C708	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C629	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	C709	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C631	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	C710	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C632	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C712	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C636	1-126-205-11	ELECT CHIP 47MF	20%	6.3V	C713	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C637	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C714	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C638	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	C715	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C639	1-124-779-00	ELECT CHIP 10MF	20%	16V	C716	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C640	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C718	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C641	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C719	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C642	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C721	1-124-779-00	ELECT CHIP 10MF	20%	16V
C647	1-124-778-00	ELECT CHIP 22MF	20%	6.3V	C722	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C648	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C723	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C650	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	C724	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C651	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	C725	1-162-638-11	CERAMIC CHIP 1MF		16V
C652	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	C726	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C653	1-163-038-00	CERAMIC CHIP 0.1MF		25V	C727	1-126-602-11	ELECT CHIP 3.3MF	20%	50V
C654	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	C729	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C655	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	C730	1-162-638-11	CERAMIC CHIP 1MF		16V

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
IC610	8-759-937-56	IC S-8054ALB-LM-S		L607	1-412-032-11	INDUCTOR CHIP 100UH	
IC801	8-752-326-18	IC CXD1204R		L608	1-412-029-11	INDUCTOR CHIP 10UH	
IC802	8-759-037-22	IC MC68HC05C4-SC411533		L609	1-412-032-11	INDUCTOR CHIP 100UH	
IC803	8-759-971-93	IC MSM6219GS		L610	1-412-029-11	INDUCTOR CHIP 10UH	
IC804	8-759-946-00	IC MB88341PFV		L613	1-412-031-11	INDUCTOR CHIP 47UH	
IC805	8-759-030-35	IC MPC1725MR		L614	1-410-657-21	INDUCTOR CHIP 180UH	
IC806	8-759-979-41	IC LM358PS		L801	1-410-655-31	INDUCTOR CHIP 120UH	
IC807	8-759-981-82	IC RC3414M		<u>TRANSISTOR</u>			
IC808	8-759-979-41	IC LM358PS		Q202	8-729-100-66	TRANSISTOR 2SC1623	
IC810	8-759-500-11	IC MM1036XF		Q203	8-729-100-66	TRANSISTOR 2SC1623	
<u>JACK</u>				Q204	8-729-101-07	TRANSISTOR 2SB798-DL	
J201	1-537-142-11	TERMINAL BOARD (AUDEO/RFU DC/VIDEO OUT)		Q206	8-729-901-01	TRANSISTOR DTC144EK	
J202	1-568-409-11	JACK, PIN 2P (AUDIO/VIDEO IN)		Q207	8-729-901-01	TRANSISTOR DTC144EK	
		(E/Australian MODEL)		Q208	8-729-901-01	TRANSISTOR DTC144EK	
<u>COIL</u>				Q209	8-729-216-22	TRANSISTOR 2SA1162	
L201	1-412-032-11	INDUCTOR CHIP 100UH		Q210	8-729-101-07	TRANSISTOR 2SB798-DL	
L202	1-412-026-11	INDUCTOR CHIP 1UH		Q211	8-729-901-01	TRANSISTOR DTC144EK	
L203	1-412-032-11	INDUCTOR CHIP 100UH		Q212	8-729-901-01	TRANSISTOR DTC144EK	
L204	1-412-031-11	INDUCTOR CHIP 47UH		Q213	8-729-100-66	TRANSISTOR 2SC1623	
L205	1-412-031-11	INDUCTOR CHIP 47UH		Q215	8-729-100-66	TRANSISTOR 2SC1623	
L208	1-412-029-11	INDUCTOR CHIP 10UH		Q216	8-729-100-66	TRANSISTOR 2SC1623	
L209	1-412-032-11	INDUCTOR CHIP 100UH		Q217	8-729-216-22	TRANSISTOR 2SA1162	
L210	1-410-387-11	INDUCTOR CHIP 33UH		Q222	8-729-101-07	TRANSISTOR 2SB798-DL	
L211	1-410-656-11	INDUCTOR CHIP 150UH		Q223	8-729-901-01	TRANSISTOR DTC144EK	
L212	1-410-381-11	INDUCTOR CHIP 10UH		Q224	8-729-102-07	TRANSISTOR 2SC2223-F13	
L213	1-410-657-21	INDUCTOR CHIP 180UH		Q225	8-729-100-66	TRANSISTOR 2SC1623	
L214	1-408-797-11	INDUCTOR CHIP 470UH		Q226	8-729-901-06	TRANSISTOR DTA144EK	
L215	1-408-795-21	INDUCTOR CHIP 330UH		Q227	8-729-805-41	TRANSISTOR 2SC3398	
L216	1-408-795-21	INDUCTOR CHIP 330UH		Q228	8-729-100-66	TRANSISTOR 2SC1623	
L217	1-410-657-21	INDUCTOR CHIP 180UH		Q229	8-729-216-22	TRANSISTOR 2SA1162	
L219	1-412-032-11	INDUCTOR CHIP 100UH		Q230	8-729-122-63	TRANSISTOR 2SA1226	
L220	1-410-380-31	INDUCTOR CHIP 8.2UH		Q231	8-729-102-07	TRANSISTOR 2SC2223-F13	
L221	1-408-795-21	INDUCTOR CHIP 330UH		Q232	8-729-102-07	TRANSISTOR 2SC2223-F13	
L222	1-410-655-31	INDUCTOR CHIP 120UH		Q233	8-729-216-22	TRANSISTOR 2SA1162	
L223	1-410-393-11	INDUCTOR CHIP 100UH		Q241	8-729-901-06	TRANSISTOR DTA144EK	
L224	1-410-656-11	INDUCTOR CHIP 150UH		Q242	8-729-901-01	TRANSISTOR DTC144EK	
L227	1-410-389-31	INDUCTOR CHIP 47UH		Q243	8-729-100-66	TRANSISTOR 2SC1623	
L228	1-410-388-21	INDUCTOR CHIP 39UH		Q244	8-729-901-01	TRANSISTOR DTC144EK	
L401	1-410-390-11	INDUCTOR CHIP 56UH		Q250	8-729-100-66	TRANSISTOR 2SC1623	
L402	1-410-387-11	INDUCTOR CHIP 33UH		Q251	8-729-216-22	TRANSISTOR 2SA1162	
L404	1-410-383-31	INDUCTOR CHIP 15UH		Q254	8-729-100-66	TRANSISTOR 2SC1623	
L405	1-410-388-21	INDUCTOR CHIP 39UH		Q401	8-729-402-84	TRANSISTOR XN4601	
L501	1-410-390-11	INDUCTOR CHIP 56UH		Q403	8-729-421-23	TRANSISTOR XN1216	
L502	1-412-032-11	INDUCTOR CHIP 100UH		Q405	8-729-100-66	TRANSISTOR 2SC1623	
L503	1-408-797-11	INDUCTOR CHIP 470UH		Q406	8-729-100-66	TRANSISTOR 2SC1623	
L601	1-412-031-11	INDUCTOR CHIP 47UH		Q407	8-729-100-66	TRANSISTOR 2SC1623	
L602	1-412-029-11	INDUCTOR CHIP 10UH		Q408	8-729-216-22	TRANSISTOR 2SA1162	
L603	1-412-029-11	INDUCTOR CHIP 10UH		Q409	8-729-102-07	TRANSISTOR 2SC2223-F13	
L604	1-412-026-11	INDUCTOR CHIP 1UH		Q410	8-729-216-22	TRANSISTOR 2SA1162	
L605	1-412-026-11	INDUCTOR CHIP 1UH		Q501	8-729-100-66	TRANSISTOR 2SC1623	
L606	1-412-026-11	INDUCTOR CHIP 1UH		Q502	8-729-100-66	TRANSISTOR 2SC1623	
				Q551	8-729-901-06	TRANSISTOR DTA144EK	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q552	8-729-902-XX	TRANSISTOR DTC114TK		Q812	8-729-901-06	TRANSISTOR DTA144EK	
Q553	8-729-902-XX	TRANSISTOR DTC114TK		Q816	8-729-100-66	TRANSISTOR 2SC1623	
Q602	8-729-100-66	TRANSISTOR 2SC1623		Q817	8-729-216-22	TRANSISTOR 2SA1162	
Q603	8-729-216-22	TRANSISTOR 2SA1162		Q818	8-729-100-66	TRANSISTOR 2SC1623	
Q604	8-729-805-42	TRANSISTOR 2SC3859		Q819	8-729-119-76	TRANSISTOR 2SB1175-HFE	
Q605	8-729-901-01	TRANSISTOR DTC144EK		Q820	8-729-100-66	TRANSISTOR 2SC1623	
Q606	8-729-901-01	TRANSISTOR DTC144EK		Q822	8-729-216-22	TRANSISTOR 2SA1162	
Q607	8-729-805-42	TRANSISTOR 2SC3859		Q824	8-729-901-01	TRANSISTOR DTC144EK	
Q608	8-729-100-66	TRANSISTOR 2SC1623		Q825	8-729-901-01	TRANSISTOR DTC144EK	
Q609	8-729-100-66	TRANSISTOR 2SC1623		Q826	8-729-216-22	TRANSISTOR 2SA1162	
Q610	8-729-216-22	TRANSISTOR 2SA1162		Q827	8-729-100-66	TRANSISTOR 2SC1623	
Q611	8-729-100-66	TRANSISTOR 2SC1623		Q828	8-729-216-22	TRANSISTOR 2SA1162	
Q612	8-729-216-22	TRANSISTOR 2SA1162		Q830	8-729-805-42	TRANSISTOR 2SC3859	
Q614	8-729-216-22	TRANSISTOR 2SA1162		RESISTOR			
Q615	8-729-100-66	TRANSISTOR 2SC1623		R201	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
Q616	8-729-100-66	TRANSISTOR 2SC1623		R202	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q617	8-729-100-66	TRANSISTOR 2SC1623		R203	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q618	8-729-100-66	TRANSISTOR 2SC1623		R204	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q619	8-729-100-66	TRANSISTOR 2SC1623		R205	1-216-295-00	METAL GLAZE 0 5% 1/10W	
Q620	8-729-100-66	TRANSISTOR 2SC1623		R206	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q621	8-729-805-42	TRANSISTOR 2SC3859		R207	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
Q622	8-729-805-42	TRANSISTOR 2SC3859		R208	1-216-047-00	METAL GLAZE 820 5% 1/10W	
Q623	8-729-805-42	TRANSISTOR 2SC3859		R209	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
Q624	8-729-805-42	TRANSISTOR 2SC3859		R210	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
Q625	8-729-216-22	TRANSISTOR 2SA1162		R211	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
Q626	8-729-100-66	TRANSISTOR 2SC1623		R212	1-216-015-00	METAL GLAZE 39 5% 1/10W (E/Australian)	
Q627	8-729-216-22	TRANSISTOR 2SA1162		R213	1-216-015-00	METAL GLAZE 39 5% 1/10W (E/Australian)	
Q628	8-729-216-22	TRANSISTOR 2SA1162		R214	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q629	8-729-920-08	TRANSISTOR DTC124TK		R215	1-216-021-00	METAL GLAZE 68 5% 1/10W	
Q630	8-729-216-22	TRANSISTOR 2SA1162		R216	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q631	8-729-216-22	TRANSISTOR 2SA1162		R218	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
Q632	8-729-100-66	TRANSISTOR 2SC1623		R219	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
Q633	8-729-216-22	TRANSISTOR 2SA1162		R220	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
Q634	8-729-100-66	TRANSISTOR 2SC1623		R221	1-216-295-00	METAL GLAZE 0 5% 1/10W	
Q635	8-729-216-22	TRANSISTOR 2SA1162		R223	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q638	8-729-216-22	TRANSISTOR 2SA1162		R224	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q639	8-729-805-42	TRANSISTOR 2SC3859		R226	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q641	8-729-100-66	TRANSISTOR 2SC1623		R227	1-216-041-00	METAL GLAZE 470 5% 1/10W	
Q642	8-729-216-22	TRANSISTOR 2SA1162		R231	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
Q644	8-729-216-22	TRANSISTOR 2SA1162		R232	1-216-029-00	METAL GLAZE 150 5% 1/10W	
Q645	8-729-100-66	TRANSISTOR 2SC1623		R233	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q646	8-729-216-22	TRANSISTOR 2SA1162		R234	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
Q647	8-729-100-66	TRANSISTOR 2SC1623		R235	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
Q648	8-729-216-22	TRANSISTOR 2SA1162		R236	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q802	8-729-100-66	TRANSISTOR 2SC1623		R237	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q803	8-729-402-19	TRANSISTOR XN6501		R238	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
Q804	8-729-402-19	TRANSISTOR XN6501		R241	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q805	8-729-901-01	TRANSISTOR DTC144EK		R242	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
Q806	8-729-100-66	TRANSISTOR 2SC1623		R243	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q807	8-729-100-66	TRANSISTOR 2SC1623		R246	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
Q809	8-729-805-42	TRANSISTOR 2SC3859		R247	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
Q810	8-729-805-42	TRANSISTOR 2SC3859		R248	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
Q811	8-729-901-06	TRANSISTOR DTA144EK					

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
R249	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	R321	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R250	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	R322	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R251	1-216-121-00	METAL GLAZE	1M	5%	1/10W	R323	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R264	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	R324	1-216-025-00	METAL GLAZE	100	5%	1/10W
R265	1-216-021-00	METAL GLAZE	68	5%	1/10W	R325	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R266	1-216-083-00	METAL GLAZE	27K	5%	1/10W	R327	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R267	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	R348	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R268	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R351	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R270	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R355	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R271	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R356	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R274	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	R357	1-216-295-00	METAL GLAZE	0	5%	1/10W
R275	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	R369	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R276	1-216-113-00	METAL GLAZE	470K	5%	1/10W	R376	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R277	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R377	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R279	1-216-295-00	METAL GLAZE	0	5%	1/10W	R378	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R281	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R380	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R282	1-216-045-00	METAL GLAZE	680	5%	1/10W	R381	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R283	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R383	1-216-045-00	METAL GLAZE	680	5%	1/10W
R284	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	R384	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R285	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R385	1-216-045-00	METAL GLAZE	680	5%	1/10W
R287	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	R389	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R288	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R395	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R289	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	R396	1-216-033-00	METAL GLAZE	220	5%	1/10W
R290	1-216-041-00	METAL GLAZE	470	5%	1/10W	R398	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R291	1-216-021-00	METAL GLAZE	68	5%	1/10W	R399	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R292	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R401	1-216-031-00	METAL GLAZE	180	5%	1/10W
R293	1-216-079-00	METAL GLAZE	18K	5%	1/10W	R402	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R294	1-216-079-00	METAL GLAZE	18K	5%	1/10W	R403	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R295	1-216-295-00	METAL GLAZE	0	5%	1/10W	R404	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R296	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R405	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R297	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	R406	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R298	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R407	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R299	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	R408	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R300	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R409	1-216-043-00	METAL GLAZE	560	5%	1/10W
R301	1-216-043-00	METAL GLAZE	560	5%	1/10W	R410	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R302	1-216-037-00	METAL GLAZE	330	5%	1/10W	R411	1-216-033-00	METAL GLAZE	220	5%	1/10W
R303	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R413	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R304	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	R414	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R305	1-216-027-00	METAL GLAZE	120	5%	1/10W	R415	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R306	1-216-045-00	METAL GLAZE	680	5%	1/10W	R416	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R307	1-216-033-00	METAL GLAZE	220	5%	1/10W	R417	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R309	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R418	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R310	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R419	1-216-047-00	METAL GLAZE	820	5%	1/10W
R311	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R420	1-216-047-00	METAL GLAZE	820	5%	1/10W
R312	1-216-041-00	METAL GLAZE	470	5%	1/10W	R421	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R313	1-216-025-00	METAL GLAZE	100	5%	1/10W	R422	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R314	1-216-041-00	METAL GLAZE	470	5%	1/10W	R424	1-216-045-00	METAL GLAZE	680	5%	1/10W
R315	1-216-041-00	METAL GLAZE	470	5%	1/10W	R425	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R316	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R426	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R317	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	R427	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R318	1-216-043-00	METAL GLAZE	560	5%	1/10W	R428	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R319	1-216-043-00	METAL GLAZE	560	5%	1/10W	R429	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R320	1-216-083-00	METAL GLAZE	27K	5%	1/10W	R430	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R431	1-216-045-00	METAL GLAZE	680 5% 1/10W	R622	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R432	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R623	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R433	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R624	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R451	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R625	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R452	1-216-037-00	METAL GLAZE	330 5% 1/10W	R626	1-216-068-00	METAL GLAZE	6.2K 5% 1/10W
R501	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R627	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R502	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R628	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R503	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R629	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R504	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R630	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R505	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R631	1-216-031-00	METAL GLAZE	180 5% 1/10W
R506	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R632	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R507	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R633	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R508	1-216-075-00	METAL GLAZE	12K 5% 1/10W	R634	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R509	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R635	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R510	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R636	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R511	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R637	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R512	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R638	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R513	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R639	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R514	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R640	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R515	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R641	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R516	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R642	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R517	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R643	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R518	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R644	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R519	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R645	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R520	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R646	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R521	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R647	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R522	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R648	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R523	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R649	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R524	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R650	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R525	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R651	1-216-103-00	METAL GLAZE	180K 5% 1/10W
R551	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R652	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R552	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R653	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R553	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R656	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R554	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R657	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R603	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R658	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R604	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R659	1-216-033-00	METAL GLAZE	220 5% 1/10W
R605	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R660	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R606	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R662	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R607	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R663	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R608	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R664	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R609	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R667	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R610	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R668	1-216-025-00	METAL GLAZE	100 5% 1/10W
R611	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R669	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R612	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R670	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R613	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R672	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R614	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R674	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R615	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R675	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R616	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R677	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R617	1-216-134-00	METAL GLAZE	2.2 5% 1/8W	R678	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R618	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R679	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R619	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R680	1-216-025-00	METAL GLAZE	100 5% 1/10W
R620	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R681	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R621	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R682	1-216-073-00	METAL GLAZE	10K 5% 1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
R685	1-216-079-00	METAL GLAZE	18K	5%	1/10W	R758	1-216-047-00	METAL GLAZE	820	5%	1/10W
R686	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R759	1-216-072-00	METAL GLAZE	9.1K	5%	1/10W
R687	1-216-041-00	METAL GLAZE	470	5%	1/10W	R760	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R688	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	R761	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R690	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R762	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R696	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R763	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R697	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	R764	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R698	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	R765	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R699	1-216-099-00	METAL GLAZE	120K	5%	1/10W	R767	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R700	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R768	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R702	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R770	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R703	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R771	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R705	1-216-097-00	METAL GLAZE	100K	5%	1/10W	R772	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R711	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R773	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R713	1-216-748-11	METAL GLAZE	39K	5%	1/10W	R774	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R715	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R776	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R716	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R777	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R717	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R780	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R718	1-216-045-00	METAL GLAZE	680	5%	1/10W	R781	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R719	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R782	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R720	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R783	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R721	1-216-079-00	METAL GLAZE	18K	5%	1/10W	R785	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R722	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R786	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R723	1-216-091-00	METAL GLAZE	56K	5%	1/10W	R787	1-216-295-00	METAL GLAZE	0	5%	1/10W
R724	1-216-077-00	METAL GLAZE	15K	5%	1/10W	R788	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R726	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	R789	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R728	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	R790	1-216-295-00	METAL GLAZE	0	5%	1/10W
R729	1-216-039-00	METAL GLAZE	390	5%	1/10W	R791	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R730	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	R792	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R731	1-216-049-00	METAL GLAZE	1K	5%	1/10W	R793	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R732	1-216-075-00	METAL GLAZE	12K	5%	1/10W	R794	1-216-043-00	METAL GLAZE	560	5%	1/10W
R733	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R801	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R734	1-216-079-00	METAL GLAZE	18K	5%	1/10W	R802	1-218-158-11	METAL GLAZE	27K	1%	1/10W
R735	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	R803	1-216-324-11	METAL GLAZE	10K	1%	1/10W
R736	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	R804	1-216-324-11	METAL GLAZE	10K	1%	1/10W
R737	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R805	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R738	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R806	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R739	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	R807	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R740	1-216-091-00	METAL GLAZE	56K	5%	1/10W	R808	1-216-043-00	METAL GLAZE	560	5%	1/10W
R741	1-216-093-00	METAL GLAZE	68K	5%	1/10W	R809	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R742	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	R810	1-216-043-00	METAL GLAZE	560	5%	1/10W
R744	1-216-089-00	METAL GLAZE	47K	5%	1/10W	R811	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R745	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R812	1-216-033-00	METAL GLAZE	220	5%	1/10W
R746	1-216-081-00	METAL GLAZE	22K	5%	1/10W	R813	1-216-134-00	METAL GLAZE	2.2	5%	1/8W
R747	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R814	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R749	1-216-121-00	METAL GLAZE	1M	5%	1/10W	R815	1-216-023-00	METAL GLAZE	82	5%	1/10W
R750	1-216-105-00	METAL GLAZE	220K	5%	1/10W	R816	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R751	1-216-097-00	METAL GLAZE	100K	5%	1/10W	R817	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R752	1-216-047-00	METAL GLAZE	820	5%	1/10W	R818	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R753	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R819	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R754	1-216-085-00	METAL GLAZE	33K	5%	1/10W	R820	1-216-045-00	METAL GLAZE	680	5%	1/10W
R755	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R821	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R757	1-216-073-00	METAL GLAZE	10K	5%	1/10W	R822	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				
R823	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R824	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R825	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R826	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R827	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R828	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R829	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R831	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R832	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R833	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R836	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R837	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R838	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R839	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R840	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R841	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R843	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R844	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R845	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R846	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R847	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R848	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R849	1-216-144-00	METAL GLAZE	5.6	5%	1/8W	
R850	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R857	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R858	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R859	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R860	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R861	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R862	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R863	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R864	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R865	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R866	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R867	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R868	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R869	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R870	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R871	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R872	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R873	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R874	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R875	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R876	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R877	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R878	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R879	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R880	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R881	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R882	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R883	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R884	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R885	1-216-099-00	METAL GLAZE	120K	5%	1/10W	

Remark	Ref.No	Part No.	Description	Remark
	R886	1-216-121-00	METAL GLAZE 1M 5%	1/10W
	R887	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R888	1-216-049-00	METAL GLAZE 1K 5%	1/10W
	R889	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R890	1-216-144-00	METAL GLAZE 5.6 5%	1/8W
	R891	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R892	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R893	1-216-121-00	METAL GLAZE 1M 5%	1/10W
	R894	1-216-748-11	METAL GLAZE 39K 5%	1/10W
	R895	1-216-077-00	METAL GLAZE 15K 5%	1/10W
	R896	1-216-295-00	METAL GLAZE 0 5%	1/10W
	R897	1-216-295-00	METAL GLAZE 0 5%	1/10W
	R898	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R899	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
VARIABLE RESISTOR				
	RV201	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
	RV202	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
	RV203	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
	RV204	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
	RV205	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
	RV207	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
	RV208	1-230-866-11	RES, ADJ, METAL GLAZE 470	
	RV401	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
	RV402	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
	RV403	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
	RV552	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
	RV801	1-230-875-21	RES, ADJ, METAL GLAZE 220K	
CRYSTAL				
	X201	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)	
	X601	1-577-118-11	VIBRATOR, LITHIUM NIOBATE (4MHz)	
	X602	1-567-733-11	VIBRATOR, CRYSTAL (17MHz)	
	X603	1-577-119-11	OSCILLATOR, CRYSTAL (28MHz)	

	*A-7051-959-A	PJ-20 BOARD, COMPLETE (Ref.No 4,000 Series)	*****	
CAPACITOR				
	C101	1-164-232-11	CERAMIC CHIP 0.01MF	50V
	C102	1-124-778-00	ELECT CHIP 22MF	6.3V
	C103	1-163-118-00	CERAMIC CHIP 110PF	50V
	C104	1-163-009-11	CERAMIC CHIP 0.001MF	50V
	C105	1-163-009-11	CERAMIC CHIP 0.001MF	50V
	C106	1-126-603-11	ELECT CHIP 4.7MF	35V
	C107	1-126-603-11	ELECT CHIP 4.7MF	35V
	C108	1-164-232-11	CERAMIC CHIP 0.01MF	50V
	C109	1-163-009-11	CERAMIC CHIP 0.001MF	50V
	C110	1-164-232-11	CERAMIC CHIP 0.01MF	50V
	C111	1-126-193-11	ELECT CHIP 1MF	50V
	C112	1-163-117-00	CERAMIC CHIP 100PF	50V
	C113	1-163-31-00	CERAMIC CHIP 390PF	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C114	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	Q112	8-729-901-13	TRANSISTOR DTA144WK	
C115	1-163-086-00	CERAMIC CHIP 3PF	0.25PF 50V	Q113	8-729-901-01	TRANSISTOR DTC144EK	
C116	1-164-232-11	CERAMIC CHIP 0.01MF	50V	<u>RESISTOR</u>			
C117	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	R101	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
C118	1-163-033-00	CERAMIC CHIP 0.022MF	50V	R102	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C119	1-163-033-00	CERAMIC CHIP 0.022MF	50V	R103	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
C120	1-164-232-11	CERAMIC CHIP 0.01MF	50V	R104	1-216-699-11	METAL CHIP 100K 0.50% 1/10W	
C121	1-163-131-00	CERAMIC CHIP 390PF	5% 50V	R105	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C122	1-163-033-00	CERAMIC CHIP 0.022MF	50V	R106	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C123	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R107	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
C124	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V	R108	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
C125	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R109	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
C126	1-164-232-11	CERAMIC CHIP 0.01MF	50V	R110	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
C127	1-163-038-00	CERAMIC CHIP 0.1MF	25V	R111	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
C128	1-124-779-00	ELECT CHIP 10MF	20% 16V	R112	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
<u>CONNECTOR</u>				R113	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
CN202	*1-565-882-11	PIN, CONNECTOR (PC BOARD) 10P		R114	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
<u>DIODE</u>				R116	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
D101	8-719-104-31	DIODE MA152WK		R117	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
D102	8-719-800-76	DIODE 1SS226		R118	1-216-041-00	METAL GLAZE 470 5% 1/10W	
D103	8-719-104-31	DIODE MA152WK		R119	1-216-033-00	METAL GLAZE 220 5% 1/10W	
D104	8-719-104-31	DIODE MA152WK		R120	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
<u>DELAY LINE</u>				R121	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
DL101	1-415-593-11	DELAY LINE, ULTRASONIC GLASS		R122	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
<u>FILTER</u>				R123	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
FL101	1-236-188-11	FILTER, BAND PASS		R124	1-216-047-00	METAL GLAZE 820 5% 1/10W	
<u>IC</u>				R125	1-216-023-00	METAL GLAZE 82 5% 1/10W	
IC101	8-759-605-61	IC CXA1203N		R126	1-216-041-00	METAL GLAZE 470 5% 1/10W	
<u>COIL</u>				R127	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
L101	1-412-031-11	INDUCTOR CHIP 47UH		R128	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
L102	1-412-032-11	INDUCTOR CHIP 100UH		R129	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
L103	1-410-383-31	INDUCTOR CHIP 15UH		R130	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
L104	1-410-385-11	INDUCTOR CHIP 22UH		R131	1-216-041-00	METAL GLAZE 470 5% 1/10W	
<u>TRANSISTOR</u>				R132	1-216-027-00	METAL GLAZE 120 5% 1/10W	
Q101	8-729-901-01	TRANSISTOR DTC144EK		R133	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
Q102	8-729-901-06	TRANSISTOR DTA144EK		R134	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
Q103	8-729-100-66	TRANSISTOR 2SC1623		R145	1-216-037-00	METAL GLAZE 330 5% 1/10W	
Q104	8-729-100-66	TRANSISTOR 2SC1623		R146	1-216-037-00	METAL GLAZE 330 5% 1/10W	
Q105	8-729-100-66	TRANSISTOR 2SC1623		R147	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
Q106	8-729-100-66	TRANSISTOR 2SC1623		R148	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q107	8-729-100-66	TRANSISTOR 2SC1623		R149	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
Q108	8-729-100-66	TRANSISTOR 2SC1623		R150	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
Q109	8-729-100-66	TRANSISTOR 2SC1623		R151	1-216-047-00	METAL GLAZE 820 5% 1/10W	
Q110	8-729-100-66	TRANSISTOR 2SC1623		R152	1-216-047-00	METAL GLAZE 820 5% 1/10W	
Q111	8-729-901-06	TRANSISTOR DTA144EK		R153	1-216-043-00	METAL GLAZE 560 5% 1/10W	
				R154	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
				<u>VARIABLE RESISTOR</u>			
				RV102	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
				RV103	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
				RV104	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	

When indicating parts by reference number, please include the board name.

KS- 11P

RC- 40P

LI- 10

FP- 89

FP- 90

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	*1-634-188-21	KS-11P BOARD (Ref.No 8,000 Series) *****			1-628-060-12	FP-89 FLEXIBLE BOARD (Ref.No 6,000 Series) *****	
		<u>CONNECOTR</u>			1-572-253-11	SWITCH, SLIDE (ENCODER)	
CN501	*1-562-880-21	CONNECOTR, CARD EDGE 15P			3-728-869-02	HOLDER, SENSOR	
		<u>CONNECTOR</u>				<u>DIODE</u>	
W502	1-574-456-11	CABLE, FLAT (1.0MM PITCH) 15P		D301	8-719-820-44	PHOTO COUPLER TLP907-0	
W502	1-574-470-11	CABLE, FLAT (1.0MM PITCH) 15P				<u>TRANSISTOR</u>	
*****		*****		Q301	8-729-906-48	TRANSISTOR EE-TP109	
	*1-634-192-21	RC-40P BOARD (Ref.No 10,000 Series) *****		*****		*****	
		<u>CONNECTOR</u>			1-628-061-12	FP-90 FLEXIBLE BOARD (Ref.No 8,000 Series) *****	
CN401	1-566-760-11	PIN, CONNECTOR (PC BOARD) 5P			3-728-837-01	HOLDER, LED	
CN951	*1-568-521-11	PIN, CONNECTOR (PC BOARD) 13P			3-728-869-02	HOLDER, SENSOR	
CN952	*1-566-182-11	PIN, CONNECTOR (PC BOARD) 3P				<u>DIODE</u>	
		<u>JACK</u>		D302	8-719-940-81	DIODE GL452S	
J951	1-565-276-11	JACK, ULTRA SMALL 1P		D303	8-719-820-44	PHOTO COUPLER TLP907-0	
J952	1-507-921-00	JACK				<u>TRANSISTOR</u>	
		<u>COIL</u>		Q302	8-729-906-48	TRANSISTOR EE-TP109	
L991	1-410-369-11	INDUCTOR CHIP 1UH				<u>SWITCH</u>	
L992	1-410-369-11	INDUCTOR CHIP 1UH		S302	1-571-680-11	SWITCH, PUSH (3 KEY) (REC PROOF/TAPE SELECT)	
L993	1-410-369-11	INDUCTOR CHIP 1UH		*****		*****	
L994	1-410-369-11	INDUCTOR CHIP 1UH				<u>MISCELLANEOUS</u>	
L995	1-410-192-51	INDUCTOR CHIP 1UH				*****	
		<u>SWITCH</u>			△.1-451-310-21	DEFLECTION YOKE (B/W) (VF-22P BOARD)	
S951	1-553-977-00	SWITCH, SLIDE (STANDBY/LOCK)			1-542-101-11	MICROPHONE (C-2020)	
S952	1-571-838-11	SWITCH, TACTIL (START/STOP)			1-575-064-11	CABLE, FLAT (1.0MM PITCH) 18P (CK-43P BOARD (W651))	
*****		*****			1-808-505-12	SENSOR (DEW)	
	*1-630-547-11	LI-10 BOARD (Ref.No 3,000 Series) *****		IC601	8-752-604-51	IC ICX045AK-1 (CCD IMAGER)	
		<u>RESISTOR</u>		M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
R938	1-216-295-00	METAL GLAZE 0 5% 1/10W		M903	A-7040-160-A	MOTOR ASSY, THREADING	
R939	1-216-295-00	METAL GLAZE 0 5% 1/10W		M904	3-707-803-01	MOTOR ASSY, AF GEAR (FOCUS)	
R940	1-216-081-00	METAL GLAZE 22K 5% 1/10W		M905	3-707-802-01	MOTOR ASSY, PZ GEAR (ZOOM)	
R941	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		M906	3-707-810-01	MOTOR, IRIS	
		<u>CONNECTOR</u>		S901	1-571-837-11	SWITCH, PUSH (ZOOM)	
W802	1-574-457-12	CABLE, FLAT (1.0MM PITCH) 23P		S902	3-707-805-01	SWITCH ASSY, AF	
W802	1-574-471-11	CABLE, FLAT (1.0MM PITCH) 23P		S903	1-571-099-11	SWITCH (CASSETTE DOWN)	
*****		*****		V901	△.1-452-482-11	CRT ASSY (M91JYZ60WB) (VF-14P BOARD)	
				V901	△.1-546-085-11	CATHODE-RAY TUBE, B/W (M01KGG007WB) (VF-22P BOARD)	
				*****		*****	

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
*3-340-514-01	BAG, PROTECTION	
*3-701-625-00	BAG, POLYETHYLENE	
*3-732-952-01	CUSHION (UPPER) (E/Australian MODEL)	
*3-732-953-01	CUSHION (LOWER) (E/Australian MODEL)	
*3-733-985-01	CUSHION (UPPER) (AEP/UK MODEL)	
*3-733-986-01	CUSHION (LOWER) (AEP/UK MODEL)	
3-751-369-11	MANUAL, INSTRUCTION (English) (AEP/UK MODEL)	
3-751-369-41	MANUAL, INSTRUCTION (French, German, Spanish) (AEP MODEL)	
3-751-369-51	MANUAL, INSTRUCTION (Dutch, Swedish, Italian) (AEP MODEL)	
3-751-369-61	MANUAL, INSTRUCTION (Portuguese) (AEP MODEL)	
3-751-797-11	MANUAL, INSTRUCTION (English) (E/Australian MODEL)	
3-751-797-41	MANUAL, INSTRUCTION (French, German, Spanish) (E MODEL)	
3-751-797-51	MANUAL, INSTRUCTION (Arabic) (E MODEL)	
*3-764-631-12	INSTRUCTION, DEW CONDENSATION (AEP/UK/E MODEL)	

**** ACCESSORIES AND PACKING MATERIALS (KIT) ****

A-6767-706-A	RFU ADAPTOR (RFU-89EA) (E MODEL)
A-6767-707-A	RFU ADAPTOR (RFU-89EA) (UK MODEL)
A-6768-254-A	RFU ADAPTOR (RFU-90E) (AEP MODEL)
A-6768-255-A	RFU ADAPTOR (RFU-90AS) (Australian MODEL)
1-571-164-11	SWITCH, ANTENNA CHANGE (CABLE) (E/UK MODEL)

3-712-673-01	SCREWDRIVER (E/UK MODEL)
*3-733-975-41	INDIVIDUAL CARTON (AEP/UK MODEL)
*3-737-771-91	INDIVIDUAL CARTON (E MODEL)
*3-741-532-01	CUSHION, ACC (E/Australian MODEL)
3-741-582-01	BELT, SHOULDER
*3-741-590-01	CUSHION, ACC (AEP/UK MODEL)
*3-746-806-01	INDIVIDUAL CARTON (Australian MODEL)

**	AC ADAPTOR (AC-V35)
***	BATTERY PACK (NP-55) (E/Australian MODEL)
***	BATTERY PACK (NP-66) (AEP/UK MODEL)

Note

**	MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
***	MARK PARTS ARE AVAILABLE AS OPTIONAL ACCESSORIES.

HARDWARE LIST

SCREW

7-621-255-50	SCREW +P 2X8
7-627-553-48	PRECISION SCREW +P 2X4 TYPE 3

STEEL BALL

7-671-155-01	STEEL BALL 3.0
7-671-156-01	BALL, STAINLESS

CCD-F350EPAK is model that carrying case is added in
CCD-F350E.

Only following parts differ from CCD-F350E.

ACCESSORIES AND PACKING MATERIALS (CCD-F350EPAK)

Part No.	Description	Remark
A-6767-706-A	RFU ADAPTOR (RFU-89EA) (E MODEL)	
1-571-164-11	SWITCH, ANTENNA CHANGE (CABLE)	
*3-340-514-01	BAG, PROTECTION	
3-701-625-00	BAG, PROTECTION	
3-712-673-01	SCREWDRIVER	
*3-741-578-31	INDIVIDUAL CARTON	
*3-741-579-01	CUSHION (UPPER)	
*3-741-580-01	CUSHION (LOWER)	
3-741-582-01	BELT, SHOULDER	
3-741-583-11	CASE (MAIN), CARRING	
3-751-797-11	MANUAL, INSTRUCTION (ENGLISH)	
3-751-797-41	MANUAL, INSTRUCTION (French, German, Spanish)	
3-751-797-51	MANUAL, INSTRUCTION (Arabic)	
*3-764-631-12	INSTRUCTION, DEW CONDENSATION	
**	AC ADAPTOR (AC-V35)	
***	BATTERY PACK (NP-55)	

Note

**	MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
***	MARK PARTS ARE AVAILABLE AS OPTIONAL ACCESSORIES.

When indicating parts by refer-
ence number, please include
the board name.

SECTION 7

CAMERA ADJUSTMENTS

During the adjustment, see the adjustment element location to the adjustment from page 228.

7-1. PRE-ADJUSTMENT PREPARATIONS (CAMERA BLOCK)

7-1-1. List of Servicing Jigs

- Oscilloscope
- Regulated power supply (2 units)
- Adjusting screwdriver
- Color monitor
- Vectorscope
- Digital voltmeter

Ref. No.	Part Name	Part No.	Use
J-1	Filter (C14) for color temperature correction	J-6080-054-A	Auto white balance adjustment
J-2	ND filter 1.0	J-6080-808-A	Max. gain adjustment (two used)
	ND filter 0.4	J-6080-806-A	Iris adjustment, Max. gain adjustment, iris in/out adjustment (two used)
	ND filter 0.1	J-6080-807-A	Iris adjustment, iris in/out adjustment
J-3	Pattern box PTB-500 *	J-6029-140-A	
J-4	Pattern box color chart	J-6020-250-A	
J-5	Siemens star	J-6080-875-A	For flange back adjustment, auto-focus adjustment
J-6	AF microcomputer data reading jig	J-6082-025-A	
J-7	Adjustment remote controller	J-6082-053-A	
J-8	Extension cable	J-6082-019-A	Extension between W602 on CD-40P board and CN601 on CV-9 board.

* PTB-100 is not available.

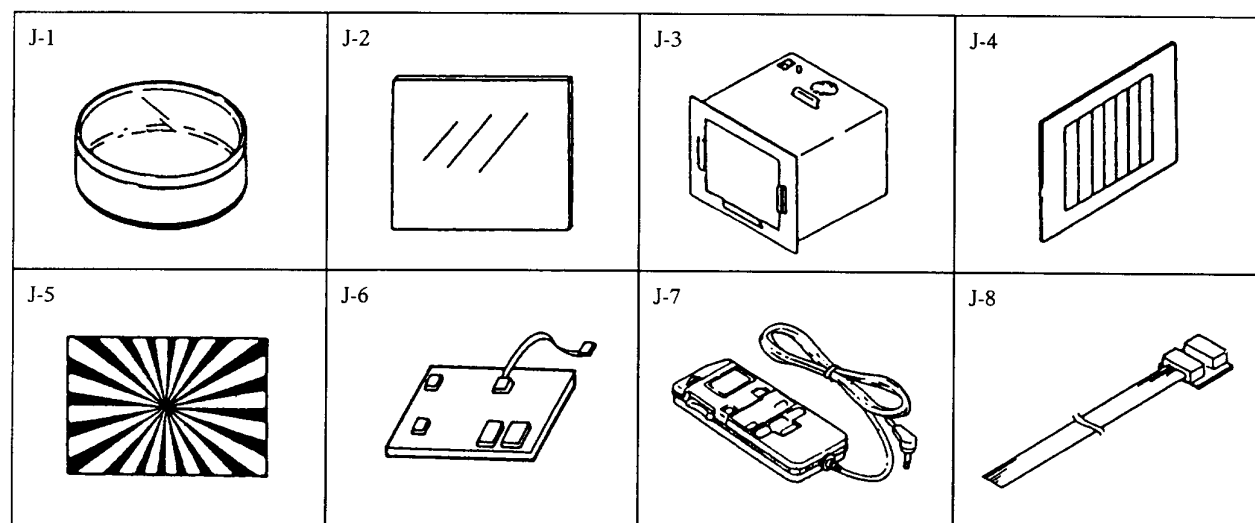


Fig. 7-1.

7-1-2. Preparations

Note: Refer to "SECTION 2 DISASSEMBLY" for details on removal of the cabinet and various boards.

- 1) Connect the various devices for adjustment as shown in Fig. 7-3.
- 2) The EVF (electronic viewfinder) is needed for confirmation of the white balance mode and shutter speed. This can be confirmed on the monitor screen by turning on the data screen (ON/OFF by S509 on VK-11P board). Remove CN901 on the CV-9 board when the EVF is not needed.
- 3) The mic amplifier (MA-66P board) is not needed. Remove CN401 on the CO-2P board.

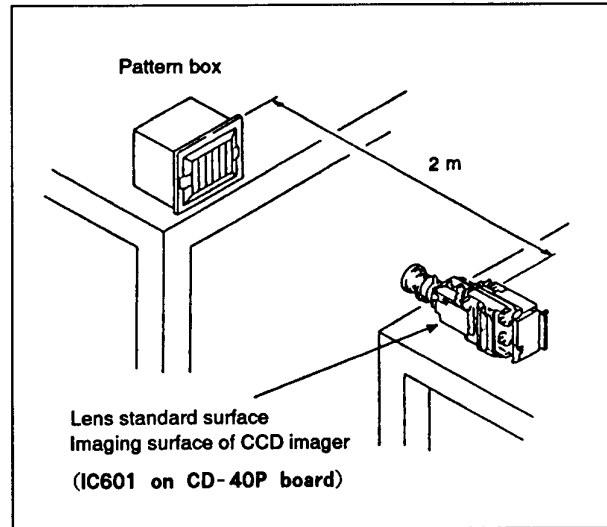


Fig. 7-2.

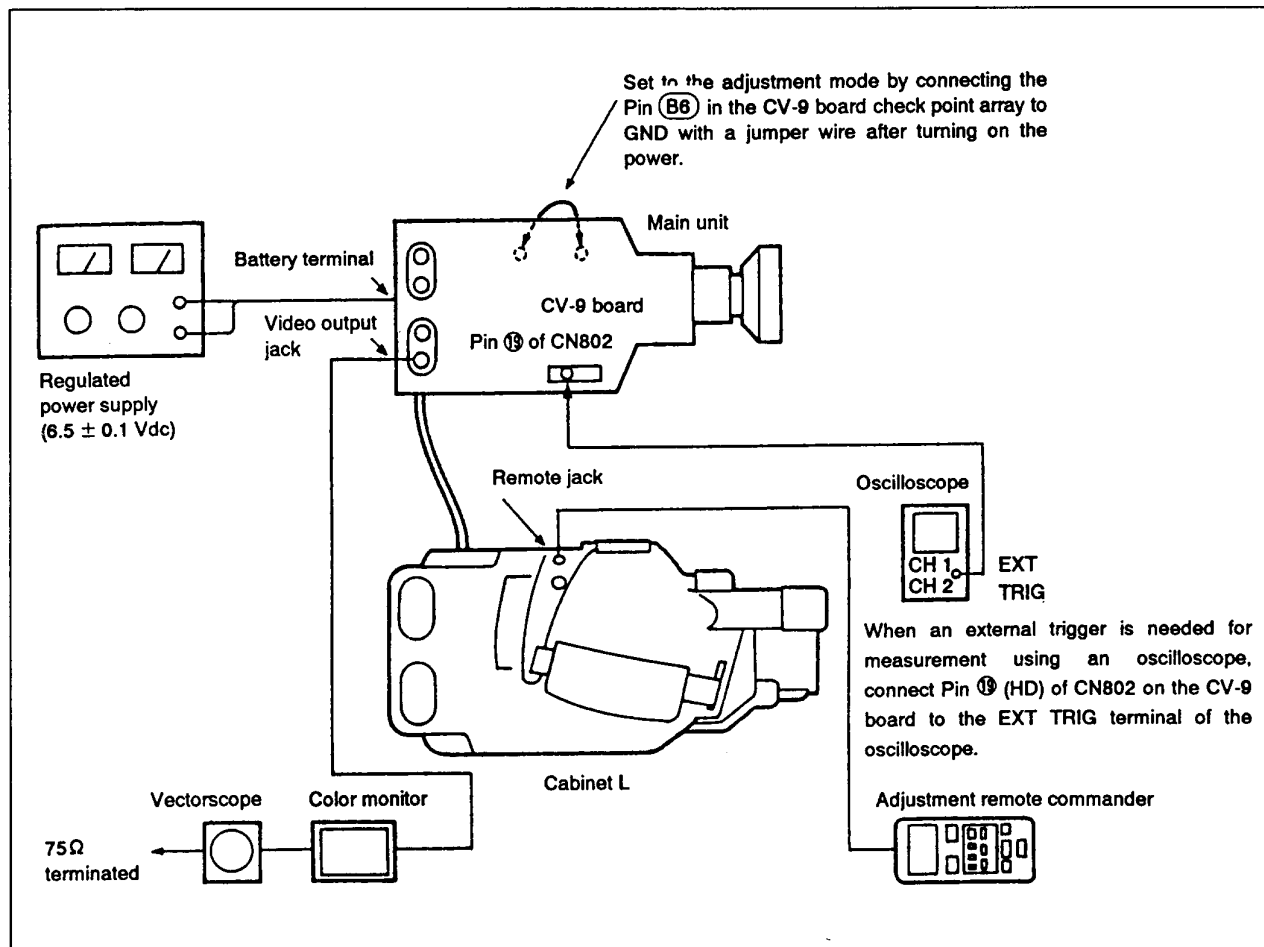


Fig. 7-3.

7-1-3. Precautions

1) Setting of Switches

Unless indicated otherwise, the switches are set to the following positions and adjustment is made without a cassette inserted.

1. Camera/video power switch (S501 on VK-11P board)
.....camera
2. Standby switch (S951 on RC-40P board) ON
3. Auto-lock switch (Auto lock cover)
.....OFF (When cabinet (right) is removed, the unit goes into OFF states automatically)
4. White balance button (S654 on CK-43P board)
..... $\star$ (indoors white balance mode)
5. Shutter button (S652 on CK-43P board)
.....normal (1/50)

2) Adjustment Order

As a rule, the adjustments are performed in the listed order.

3) Subjects

1. Color bar chart (standard picture frame)

When performing adjustment using the color bar chart, adjusting the picture frame shown in Fig. 7-4. (standard picture frame).

2. White pattern (standard picture frame)

Remove the color bar chart from the pattern box and use the zoom lever so that the white pattern has the same size and is the same position as the color bar chart (standard picture frame).

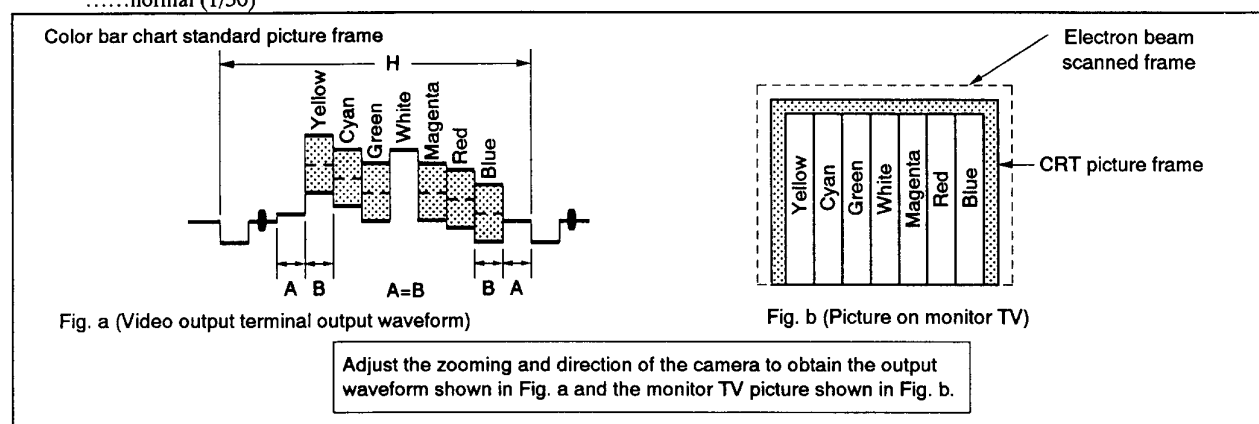


Fig. 7-4.

3. All white pattern

Remove the color bar chart from the pattern box and set the zoom lever fully to the TELE (42 mm) side.

4. High luminance pattern

Create the high luminance pattern as shown in Fig. 7-5., and adjust for the picture frame shown in Fig. 7-6.

5. Siemens star (J-6080-875-A)

Adjust the direction of the camera so that center of the Siemens star is lined up with the center of the monitor screen on the monitor TV screen.

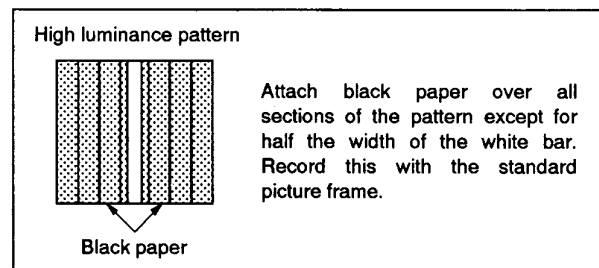


Fig. 7-5.

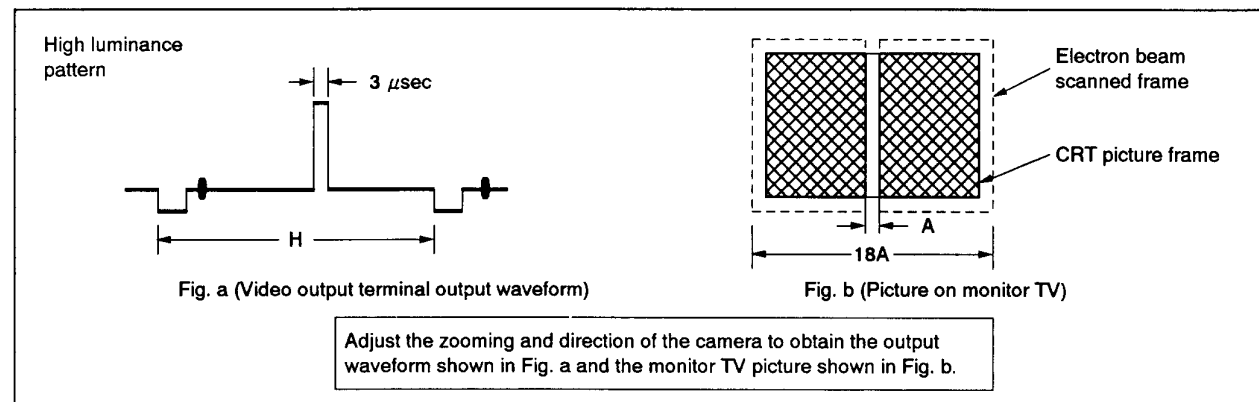


Fig. 7-6.

7-1-4. Adjustment Remote Controller

An EVR (electronic variable resistor) is used as the adjustment element for the camera block, replacing the conventional semi-fixed resistor. The EVR is controlled by the EVR/AWB microcomputer (IC601 on CV-9 board). This microcomputer reads the data written in the nonvolatile memory of the microcomputer and sends it to the EVR. The EVR D-A converts this data (8 bits for each adjustment point) and creates the adjustment voltage.

Thus, it is necessary to change the adjustment data contained in the nonvolatile memory when adjusting the camera block, and the adjustment memory is used for this purpose.

The adjustment remote controller performs bidirectional communications with the camera block microcomputer using the remote control signal lines (LINC/S). Adjustment addresses and adjustment data increment/decrement commands are sent to the camera block microcomputer from the adjustment remote controller. Adjustment addresses and adjustment data are sent from the camera block microcomputer to the adjustment remote controller.

1. Use of adjustment remote controller

Solder the lead wire to Pin (B6) (refer to 7-1-5) of the check point array on the CV-9 board.

- 1) Connect the adjustment remote controller to the remote terminal (J951 on RC-40P board). (Set the HOLD switch of the adjustment remote controller to the HOLD position (SERVICE position).)
- 2) Turn on the power of the main unit.
- 3) Connect Pin (B6) (CAM ADJ) of the check point array to GND using a jumper wire.

(This connection causes the EVR/AWB microcomputer to cease normal remote control operation and to begin adjustment dedicated communications.)

Note: Be sure to make this connection only after turning on the power. The following will be displayed on the LCD of the adjustment remote controller if the connection is normal. (Adjustment data varies according to the unit.)

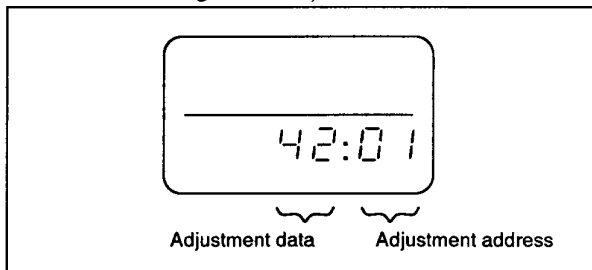


Fig. 7-7.

- 4) Designate the desired adjustment address using the adjustment remote controller. The adjustment address is incremented by pressing the FF (▶) button and decremented by pressing the REW (◀) button. (The adjustment address is indicated in decimal, and there are 89 addresses from 01 to 89. The adjustment address corresponds to the EVR (CV-9 board, IC608, IC609, IC804) output terminals. Refer to Table 7-3. for the adjustment contents of the various addresses.)

- 5) Perform adjustment by incrementing or decrementing the adjustment data.

The adjustment data is incremented by pressing the PLAY (▶) button. The adjustment data is decremented by pressing the STOP (■) button.

- The adjustment data is indicated in hexadecimal. There are 256 values from 00 to FF.

Hexadecimal	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Indication on LCD	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal equivalent	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 7-1.

- The adjustment data corresponds to the EVR (CV-9 board, IC608, IC609, IC804) output voltage, and is as follows.

Adjustment data () is decimal equivalent	EVR output voltage
FF (=255)	Maximum value (approx. 5 Vdc)
↑	↑
F0 (=240)	
E0 (=224)	
D0 (=208)	
C0 (=192)	
B0 (=176)	
A0 (=160)	
90 (=144)	
80 (=128)	Center value (approx. 2.5 Vdc)
↓	↓
70 (=112)	
60 (=96)	
50 (=80)	
40 (=64)	
30 (=48)	
20 (=32)	
10 (=16)	
00 (=0)	Minimum value (approx. 0 Vdc)

Table 7-2.

- 6) The adjustment address is changed using the FF (▶▶) button or REW (◀◀) button to store the adjustment data in the nonvolatile memory of EVR/AWB microcomputer (IC601 on CV-9 board).

(The new adjustment data is not stored in the nonvolatile memory unless this operation is performed.)

2. Precautions on use of adjustment remote controller

It is possible to accidentally erase correct adjustment data due to an error in operation of the adjustment remote controller. In order to prevent this, we recommend that you make a note of all adjustment data before adjustment and record the new adjustment data after completing each adjustment item.

3. Adjustment address table

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Adjustment Data Memo Column
01	Pin ⑬ of IC609	DELTA R	Auto white balance adjustment	
02	Pin ⑭ of IC609	DELTA B		
03	Pin ② of IC609	TITLE PEDESTAL	Not used	—
04	Pin ③ of IC609	C-PED	Fixed at “99”	99
05	Pin ④ of IC609	R-Y GAIN	Color reproduction (gain) adjustment	
06	Pin ⑤ of IC609	B-Y GAIN		
07	Pin ⑥ of IC609	R-Y HUE	Color reproduction (hue) adjustment	
08	Pin ⑦ of IC609	B-Y HUE		
09	Pin ⑧ of IC609	C LEVEL		
10	Pin ⑨ of IC609	Y GAIN		
11	Pin ⑫ of IC609	R GAIN	Pre-white balance adjustment	
12	Pin ⑬ of IC609	B GAIN		
13	Pin ⑭ of IC608	C2 GAIN	Chroma matrix adjustment	
14	Pin ⑮ of IC608	C1 GAIN		
15	Pin ② of IC608	Y1 GAIN	Y matrix adjustment	
16	Pin ③ of IC608	HUE CONT	Burst phase adjustment	
17	Pin ④ of IC608	WC	White clip adjustment	
18	Pin ⑤ of IC608	Y LEVEL		
19	Pin ⑥ of IC608	SET UP		
20	Pin ⑦ of IC608	SYNC LEVEL		
21	Pin ⑧ of IC608	APERTURE	Aperture adjustment	
22	Pin ⑨ of IC608	BURST LEVEL		
23		————		—
24	Pin ⑬ of IC608	CHARACTOR	Fixed at “00”	00
25	Pin ⑭ of IC804	IRIS		
26	Pin ⑮ of IC804	FOCUS SPEED		
27	Pin ② of IC804	HALL OFFSET	Hall adjustment	
28	Pin ③ of IC804	MAX GAIN		
29	Pin ④ of IC804	TITLE A/D		
30		————		—
31	Pin ⑥ of IC804	V SUB		
32	Pin ⑦ of IC804	AGC		
33		————		—
34		————		—
35		————		—
36		————		—

Table 7-3. (1)

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Adjustment Data Memo Column																				
37		MODE	The following adjustment modes are selected by changing the adjustment data. <table><tr><th>Adjustment data</th><th>Adjustment mode</th></tr><tr><td>00</td><td>Release</td></tr><tr><td>01</td><td>Focus hunching</td></tr><tr><td>03</td><td>Zoom position</td></tr><tr><td>05</td><td>Hall, iris close</td></tr><tr><td>07</td><td>Hall, iris open</td></tr><tr><td>09</td><td>Hall in/out threshold</td></tr><tr><td>0B</td><td>Auto-focus LLA</td></tr><tr><td>FD</td><td>Auto-focus filter fixed at FA</td></tr><tr><td>FF</td><td>Auto-focus filter fixed at FH</td></tr></table>	Adjustment data	Adjustment mode	00	Release	01	Focus hunching	03	Zoom position	05	Hall, iris close	07	Hall, iris open	09	Hall in/out threshold	0B	Auto-focus LLA	FD	Auto-focus filter fixed at FA	FF	Auto-focus filter fixed at FH	00
Adjustment data	Adjustment mode																							
00	Release																							
01	Focus hunching																							
03	Zoom position																							
05	Hall, iris close																							
07	Hall, iris open																							
09	Hall in/out threshold																							
0B	Auto-focus LLA																							
FD	Auto-focus filter fixed at FA																							
FF	Auto-focus filter fixed at FH																							
38		————	Not used	—																				
39		MACRO																						
40		IN/OUT DOOR	Fixed at F1	F1																				
41		————	Not used	—																				
42		FH B	Auto-focus adjustment																					
43		STEP A	Fixed at 08	08																				
44		WIDE-THR	Fixed at 15	15																				
45		Hysteresis	Iris in/out adjustment																					
46		HALL LEVEL																						
47		FH BASE	Fixed at 08	08																				
48		FA BASE	Fixed at 14	14																				
49		KATAMUKI	Fixed at 06	06																				
50		————	Not used	—																				
51		BACK RUSH	Fixed at F2	F2																				
52		FH W	Auto-focas adjustment																					
53		AGC W																						
54		AGC B																						
55		————	Not used	—																				
56		M12-THR	Fixed at C8	C8																				
57		————	Not used	—																				
58		————	Not used	—																				
59		START R	Preset R CONT data for reset start	30																				
60		START B	Preset B CONT data for reset start	41																				
61		BTM SLP R	Fixed at 00	00																				
62		BTM SLP B	Fixed at 41	41																				
63		MDL SLP R	Fixed at 00	00																				
64		MDL SLP B	Fixed at 00	00																				
65		TOP SLP R	Auto white balance adjustment																					
66		TOP SLP B																						
67		KEIKO R	Fixed at 21	21																				
68		KEIKO B	Fixed at 01	01																				
69		BTM UP	Fixed at B4	B4																				
70		BTM DWN	Fixed at 84	84																				

Table 7-3. (2)

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Adjustment Data Memo Column										
71		MDL UP	Fixed at 80	80										
72		MDL DWN	Fixed at 69	69										
73		TOP UP	Auto white balance adjustment											
74		TOP DWN												
75		KEIKO DWN	Fixed at 58	58										
76		R DWN LMT	Fixed at 1E	1E										
77		B UP LMT	Auto white balance adjustment											
78		R OUT LMT												
79		B OUT LMT												
80		R OUTDOOR												
81		B OUTDOOR												
82		BM DIVID	Fixed at 23	23										
83		DELAY TM	Auto white balance tracking speed. Fixed at 10	10										
84		FAST TM	Fixed at 20	20										
85		CAM DDS 0	Fixed at 00	00										
86			Fixed at 00	00										
87			Fixed at 00	00										
88		CAM ALN	Fixed at 00	00										
89		AWB mode	The following auto white balance adjustment modes are selected by changing the adjustment data.<table><tr><th>Adjustment data</th><th>Adjustment mode</th></tr><tr><td>00</td><td>Release</td></tr><tr><td>10</td><td>White balance value output (within tracking zone)</td></tr><tr><td>E0</td><td>Auto white balance adjustment possible</td></tr><tr><td>F0</td><td>Auto white balance tracking zone evaluation invalid</td></tr></table>	Adjustment data	Adjustment mode	00	Release	10	White balance value output (within tracking zone)	E0	Auto white balance adjustment possible	F0	Auto white balance tracking zone evaluation invalid	00
Adjustment data	Adjustment mode													
00	Release													
10	White balance value output (within tracking zone)													
E0	Auto white balance adjustment possible													
F0	Auto white balance tracking zone evaluation invalid													

Table 7-3. (3)

7-1-5. Check Point Array

Almost all of the measurement points for camera block adjustment are located in the check point array on the CV-9 board. Solder short lead wires onto the terminals needed for adjustment and connect an oscilloscope, etc.

The terminal numbers and signal names for the check point array are shown in Table 7-4.

Terminal No.	Signal Name	Terminal No.	Signal Name
A1	G OUT	B1	R-Y
A2	N.C	B2	B-Y
A3	N.C	B3	Y(LPF)OUT
A4	Y0	B4	V SUB
A5	Y1	B5	AW ADJ
A6	C0	B6	CAM ADJ
A7	C1	B7	MODE
A8	N.C	B8	VIDEO OUT
A9	YH	B9	SHUTTER EN
A10	C-OUT	B10	GND
A11	N.C	B11	CCD OUT

Table 7-4.

* N.C.....no connection

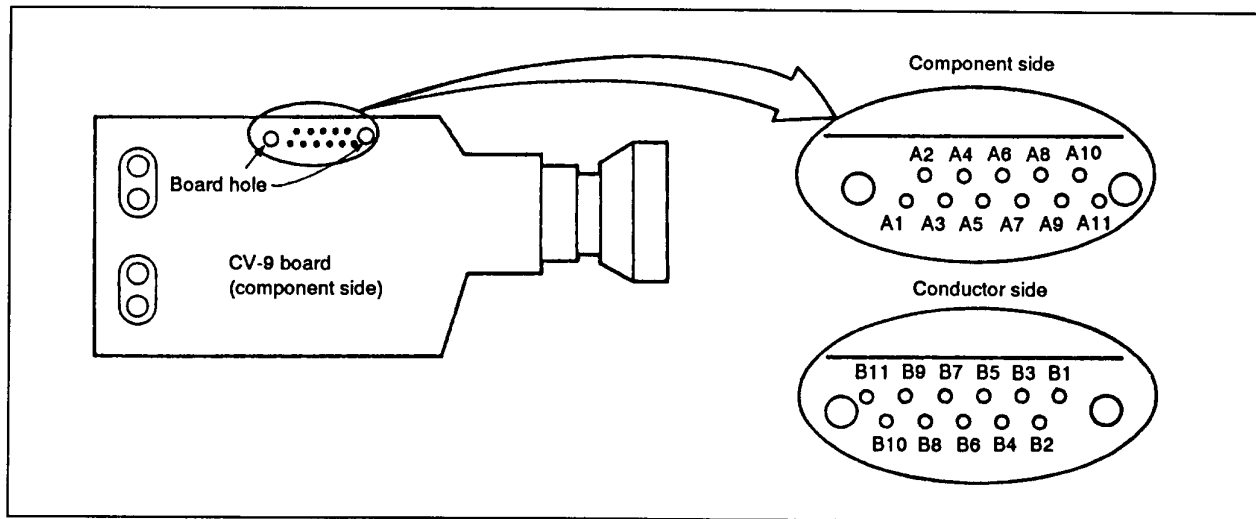


Fig. 7-8.

7-1-6. AF Microcomputer Data Reading Jlg

The AF microcomputer data reading jig converts the serial data (output data varies according to hall (iris) state, focus state, focus motor speed, zoom ring position, etc.) for adjustment output from the AF microcomputer (IC802 on CV-9 board) into a 2-digit hexadecimal code and displays it on the LED.

Connections:

Connect as shown in the diagram below.

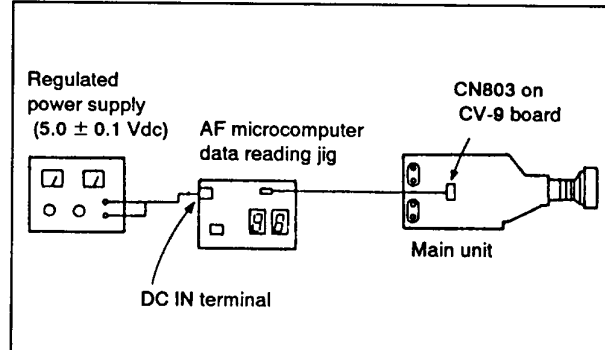


Fig. 7-9.

7-1-7. Data Processing

For some of the adjustment items, calculation from the data (hexadecimal) indicated on the AF microcomputer data reading jig and adjustment remote controller is needed to obtain the adjustment data. In these cases, convert the hexadecimal values to decimal before calculation and reconvert the result to hexadecimal to obtain the adjustment data. A hexadecimal-decimal conversion table is shown in Table 7-5.

Hexadecimal-Decimal Conversion Table																	②
Hexadecimal lower digit Hexadecimal upper digit	0	1	2	3	4	5	6	7	8	9	A (H)	B (b)	C (c)	D (d)	E (E)	F (F)	
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	
A (H)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	
① → B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	

Note: () is the indication on the jig or adjustment remote commander.

Example: The indication on the jig or adjustment remote commander is BD (b d).
As the upper digit is B (b) and the lower digit is D (d), a decimal value of 189 is obtained from the intersection of ① and ② in the above table.

Table 7-5.

7-2. CAMERA SYSTEM ADJUSTMENT

7-2-1. Flange Back Adjustment

Subject	Siemens star (2m directly in front of lens reference ("⊕" marked))
Measurement Point	Check with a monitor TV
Measuring Instrument	
Adjustment Element	Flange back adjusting pin
Tools	Phillips screwdriver, flat blade (-) screwdriver

Adjustment method:

- 1) Press the FOCUS switch (S655 on CK-43P board) to set to the MANUAL mode.
- 2) Position a Siemens star 2m directly in front of the lens reference plane (See Fig. 7-2.).
- 3) Orient the camera block to have the center of the Siemens star imaged on the monitor TV screen coincide with the monitor screen center.
- 4) Check to assure the smooth motion of the lens zoom lever to both its extreme WIDE position (7 mm) and TELE position (42 mm), and then set it at the extreme WIDE position. (In this process, also check the monitor image to assure proper zooming operation.)
- 5) To set the iris to the open state, lower the illumination on the Siemens star in the range in which the proper image with no noise can be displayed on the monitor TV screen.
- 6) Set the lens focusing mark at the center of "2".

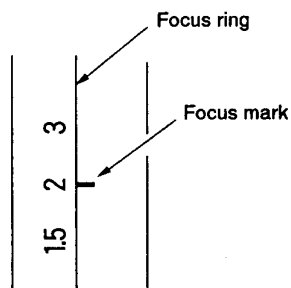


Fig. 7-10.

- 7) Open the DK-10P board and loosen flange back setscrew ① with a Phillips screwdriver. (See Fig. 7-12.)
- 8) By turning the flange back adjusting pin ② while watching the monitor screen, attain the optimum definition of a wedge at the Siemens star center on the screen. (Turn it a few turns to the left and right to ensure optimum definition.)
Note: Do not turn the adjusting pin excessively in either direction.
- 9) While holding the flange back adjusting pin ② to prevent further rotation, retighten the flange back setscrew ①.

- 10) With the zoom lever fixed at its WIDE end, turn the focusing ring and set it to the position that provides the optimum definition image of the wedge. Check to assure the focusing mark position is within the range shown in Fig. 7-11. Also, rotate the focusing ring to the close (1.1m) and far (∞) extremes and confirm that the wedge is no longer in focus.

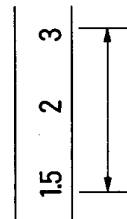


Fig. 7-11.

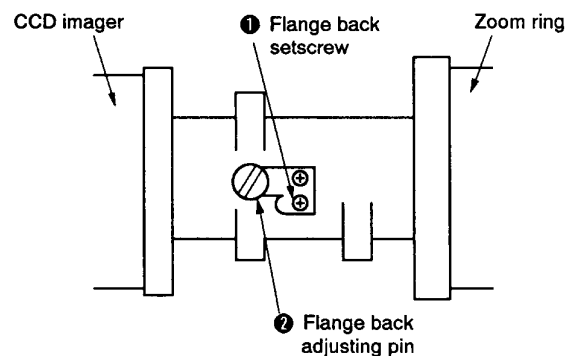


Fig. 7-12.

- 11) Fix the zoom lever at the extreme TELE position.
- 12) Turn the focusing ring and stop at the position where the wedge has optimum definition.
Confirm that the focus mark is within ± 1.5 mm of "2".

7-2-2. 15V Power Supply Adjustment (PS-263P Board)

Measurement Point	Pin ② of W902
Measuring Instrument	Digital voltmeter
Adjustment Element	RV962
Specified Value	15.0 ± 0.5 Vdc

Adjustment method:

- 1) Adjust to 15.0 ± 0.5 Vdc with RV962.

7-2-3. Power Supply Check (PS-263P Board)

Measuring Instrument	Digital voltmeter
CAM 5V Check	
Measurement Point	Pin ④ of W902
Specified Value	5.05 ± 0.2 Vdc
32V Check	
Measurement Point	Pin ① of W902
Specified Value	32 ± 2 Vdc

Checking method:

- 1) Each power supply voltage should be at its specified level.

7-2-4. EVR Initial Settings

Set to the following initial settings of the adjustment data only when the EVR/AWB microcomputer (IC602 on CV-9 board) was replaced.

Adjustment Address	Adjustment Data Initial Value	Adjustment Address	Adjustment Data Initial Value	Adjustment Address	Adjustment Data Initial Value
01 (DELTA R)	50	44 (WIDE THR)	15	70 (BTM DWN)	84
02 (DELTA B)	50	47 (FH BASE)	08	71 (MDL UP)	80
04 (C-PED)	99	48 (FA BASE)	14	72 (MDL DWN)	69
16 (HUE CONT)	AE	49 (KATAMUKI)	06	75 (KEIKO DWN)	58
17 (WHITE CLIP)	FF	51 (BACK RUSH)	F2	76 (R DWN LMT)	1E
18 (Y LEVEL)	40	56 (M12-THR)	C8	82 (AWB)	23
24 (CHARACTOR)	00	59 (START R)	30	83 (D TM)	10
25 (IRIS)	80	60 (START B)	41	84 (F TM)	20
28 (MAX GAIN)	B0	61 (BTM SLP R)	00	85 (CAM DDS O)	00
31 (V SUB)	80	62 (BTM SLP B)	41	86	00
32 (AGC)	FF	63 (MDL SLP R)	00	87	00
37 (MODE)	00	64 (MDL SLP B)	00	88 (CAM ALN)	00
39 (MACRO)	00	67 (KEIKO R)	21	89 (AWB MODE)	00
40 (IN/OUT DOOR)	F1	68 (KEIKO B)	01		
43 (STEPA)	08	69 (BTM UP)	B4		

Table 7-6.

Adjustment method:

- 1) Set the adjustment data at the various adjustment addresses to the initial values using the adjustment remote controller.
- 2) Change the adjustment address to store the last adjustment data in the memory.

7-2-5. PLL Adjustment (CV-9 Board)

Measurement Point	Pin ② of IC604
Measuring Instrument	Digital voltmeter
Adjustment Element	CT601
Specified Value	2.5 ± 0.2 Vdc

Adjustment method:

- 1) Adjust to 2.5 ± 0.2 Vdc with CT601.

7-2-6. V SUB Adjustment (CV-9 Board)

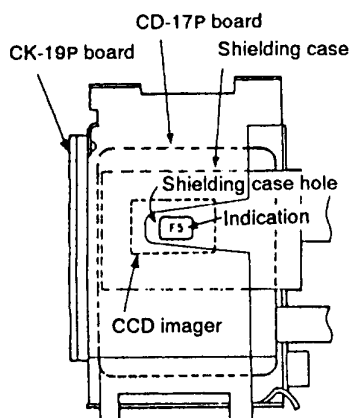
Subject	Not needed
Measurement Point	Pin (B4) (V SUB) of check point array
Measuring Instrument	Digital voltmeter
Adjustment Address	31 (V SUB)
Specified Value	(Voltage indicated by the imager) ± 0.1 Vdc

Adjustment method:

- 1) Set the adjustment address to 31 using the adjustment remote controller.
- 2) Change the adjustment data using the adjustment remote controller to set the V SUB voltage (Voltage indicated by the imager) to ± 0.1 Vdc.
- 3) Change the adjustment address to store the adjustment data in the memory.

Note: The specified value of V SUB voltage is indicated by the abbreviation on the CCD imager.

Integer section abbreviation	Integer value
E	9.0
F	9.5
G	10.0
H	10.5
J	11.0
K	11.5
L	12.0
M	12.5
N	13.0
P	13.5
Q	14.0
R	14.5
S	15.0
T	15.5
U	16.0
V	16.5
W	17.0
X	17.5
Y	18.0
Z	18.5



(Example)

When "3J" is indicated,

3 means the specified value of PGL voltage. (The PGL voltage adjustment is not required.)

J means the specified value of V SUB voltage. (J=11.0 Vdc)

7-2-7. Hall Adjustment (CV-9 Board)

Subject	All black (cover lens with black cap)
Measurement Point	CN803
Measuring Instrument	AF microcomputer data reading jig
Adjustment Element	RV801
Adjustment Address	27 (Hall Offset)
Specified Value	When iris closed: Minimum value of 01 to 04 When iris open: 3D or 3E

Adjustment method:

- 1) Set the adjustment address to 37 with the adjustment remote controller, and set the adjustment data to 05. (Setting when iris closed)
- 2) Change the adjustment address to 27.
- 3) Change the adjustment data until the indication on the AF microcomputer data reading jig is the minimum value in the range of 01 to 04. (Hall offset adjustment)
- 4) Change the adjustment address to 37 and set the adjustment data to 07. (Setting when iris open)
- 5) Adjust RV801 until the indication on the AF microcomputer data reading jig is either 3D or 3E. (3D is indicated as 3 d.)
- 6) Repeat steps 1) through 5) until the specified values are satisfied.
- 7) Set the adjustment address to 37 and set the adjustment data to 00. (Releases adjustment mode)
- 8) Change the adjustment address to store the adjustment data in the memory.

Fig. 7-13.

7-2-8. Iris Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Filter	ND filter 0.4 and 0.1
Measurement Point	Pin(B11) (CCD OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	25 (Iris)
Specified Value	360 ± 20 mVp-p

Adjustment method:

- 1) Set the adjustment address to 25 with the adjustment remote controller.
- 2) Without attaching an ND filter, change the adjustment data with the adjustment remote controller to set the IRIS OUT signal level to 360 ± 20 mVp-p.
- 3) Attach the ND filter 0.5 (0.4 ± 0.1) to the front of the lens and confirm that there is a smooth change in the signal level.
- 4) Remove the ND filter and confirm that the signal level is 360 ± 20 mVp-p.
- 5) Repeat 2) through 4) if the specified value is not met.
- 6) Change the adjustment address to store the adjustment data in the memory.

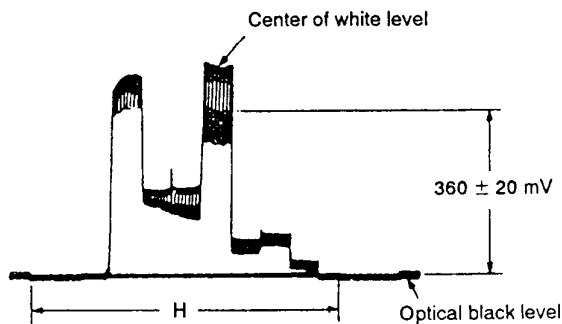


Fig. 7-14.

7-2-9. Iris In/Out Adjustment (CV-9 Board)

Subject	White pattern standard picture frame
Filter	ND filter 0.4 (two) and 0.1 (one)
Measurement Point	CN803
Measuring Instrument	AF microcomputer data reading jig
Adjustment Address	46 (hall level) 45 (hysteresis)

Adjustment method:

- 1) Cover the lens with the ND filter 0.8 ($0.4+0.4$).
- 2) Set the adjustment address to 37 with the adjustment remote controller and set the adjustment data to 09. (Hall in/out threshold mode setting)
- 3) Read the data indicated on the AF microcomputer data reading jig. This data will be a.
- 4) Change the adjustment address to 46 and enter a as the adjustment data.
- 5) Remove the ND filter 0.8 and replace it with ND filter 0.5 ($0.4+0.1$).
- 6) Read the data indicated on the AF microcomputer data reading jig. This data will be b.
- 7) Subtract data b from data a to obtain data c.
(Refer to Table 7-5. Hexadecimal-Decimal Conversion Table)
(Example)
If $a=1A$ and $b=15$, $c=a-b=1A(26) - 15(21) = 05$
() indicates decimal value
- 8) Obtain the hysteresis data from data c using the table below.

Data c	Hysteresis Data
02, 03	01
04, 05, 06	02
07, 08, 09	03

(Example)

The hysteresis data is 02 if $c=05$.

- 9) Change the adjustment address to 45 and enter the hysteresis data as the adjustment data.
- 10) Change the adjustment address to 37 and set the adjustment data to 00.
(Releases hall in/out threshold mode)
- 11) Change the adjustment address to store the adjustment data in the memory.

7-2-10. AGC Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (B3) (Y (LPF) OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	32 (AGC)
Specified Value	160 ± 5 mVp-p

Adjustment method:

- 1) Set the adjustment address to 32 using the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to set the Y (LPF) signal level to 160 ± 5 mVp-p.
- 3) Change the adjustment address to store the adjustment data in the memory.

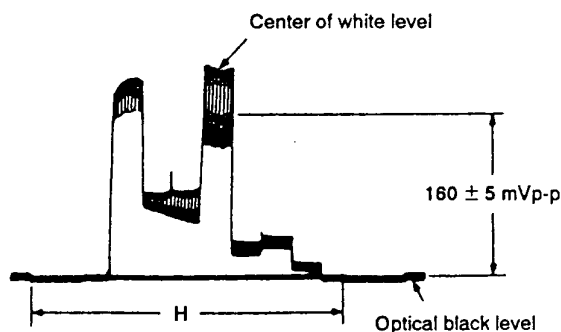


Fig. 7-15.

7-2-11. Y Signal Matrix Adjustment (CV-9 Board)

Subject	Color bar standard picture frame
Measurement Point	1: Pin (A4) (Y0) of check point array 2: Pin (A5) (Y1) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	15 (Y1 GAIN)
Specified Value	Y1 signal level=Y0 signal level

Adjustment method:

- 1) Connect the oscilloscope to Pin (A4) of the check point array and measure the Y0 signal level.
- 2) Connect the oscilloscope to Pin (A5) of the check point array.
- 3) Set the adjustment address to 15 using the adjustment remote controller.
- 4) Change the adjustment data until the Y1 signal level is the same as the Y0 signal level measured in 1).
- 5) Change the adjustment address to store the adjustment data in the memory.

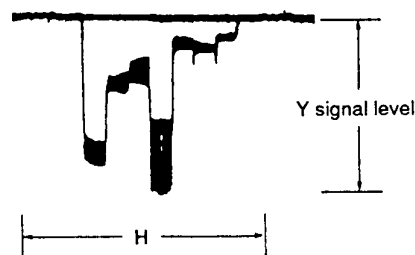


Fig. 7-16.

7-2-12. Chroma Signal Matrix Adjustment (1) (CV-9 Board)

Subject	Color bar standard picture frame
Measurement Point	1: Pin (A6) (C0) of check point array 2: Pin (A7) (C1) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	14 (C1 GAIN)
Specified Value	C1 signal level=C0 signal level

Adjustment method:

- 1) Connect the oscilloscope to Pin (A6) of the check point array and measure the C0 signal level. (The C0 signal level is the larger of the CR and CB signal levels.)
- 2) Connect the oscilloscope to Pin (A7) of the check point array.
- 3) Set the adjustment address to 14 using the adjustment remote controller.
- 4) Change the adjustment data until the C1 signal level is the same as the C0 signal level measured in 1).
- 5) Change the adjustment address to store the adjustment data in the memory.



Fig. 7-17. C0 and C1 signal levels

7-2-13. Chroma Signal Matrix Adjustment (2) (CV-9 Board)

Subject	Color bar standard picture frame
Measurement Point	CH1 (X): Pin (B2) (B-Y) of check point array or emitter of Q642 CH2 (Y): Pin (B1) (R-Y) of check point array or emitter of Q614
Measuring Instrument	Oscilloscope (X-Y mode)
Adjustment Address	13 (C2 GAIN)
Specified Value	Separate color luminance points become one.

Note: Adjustment can be made in the same manner using a vectorscope.
(Vectorscope connection terminal: video output terminal)

Adjustment method:

- 1) Set the adjustment address to 13 using the adjustment remote controller.
- 2) Change the adjustment data so that the two separate color luminance points become one respectively.
- 3) Change the adjustment address to store the adjustment data in the memory.

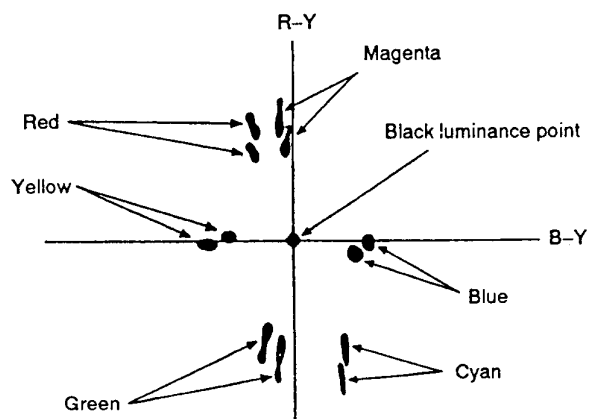


Fig. 7-18.

7-2-14. YH Level Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (A9) (YH) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	10 (Y GAIN)
Specified Value	900 ± 40 mVp-p

Adjustment method:

- 1) Set the adjustment address to 10 with the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to set the YH signal level to 900 ± 40 mVp-p.
- 3) Change the adjustment address to store the adjustment data in the memory.

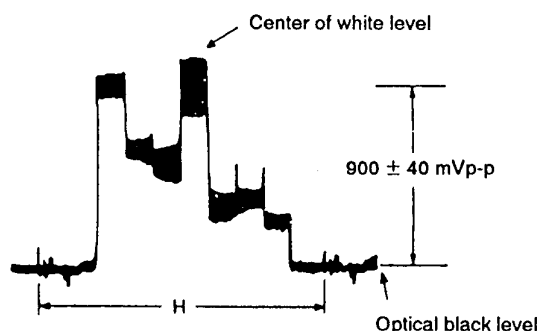


Fig. 7-19.

7-2-15. Sync Level Adjustment (CV-9 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	20 (SYNC LEVEL)
Specified Value	150 ± 5 mVp-p

Adjustment method:

- 1) Set the adjustment address to 20 with the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to set the sync level to 150 ± 5 mVp-p.
- 3) Change the adjustment address to store the adjustment data in the memory.

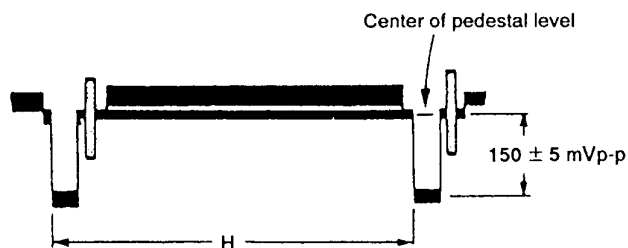


Fig. 7-20.

7-2-16. Setup Adjustment (CV-9 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	19 (SET UP)
Specified Value	15 ± 5 mV

Note: 1) and 2) are steps taken to reduce noise.

Adjustment method:

- 1) Set the address to 21 (APERTURE) with the adjustment remote controller, and enter 00 as the adjustment data after making a note of the adjustment data for this at address.
- 2) Set the address to 28 (MAX GAIN) with the adjustment remote controller, and enter 00 as the adjustment data after making a note of the adjustment data for this address.
- 3) Set the adjustment address to 19 with the adjustment remote controller.
- 4) Change the adjustment data with the adjustment remote controller to set the setup level to 15 ± 5 mV.
- 5) Set the adjustment address to 21 and enter the adjustment data recorded in 1).
- 6) Set the adjustment address to 28 and enter the adjustment data recorded in 2).
- 7) Change the adjustment address to store the adjustment data in the memory.

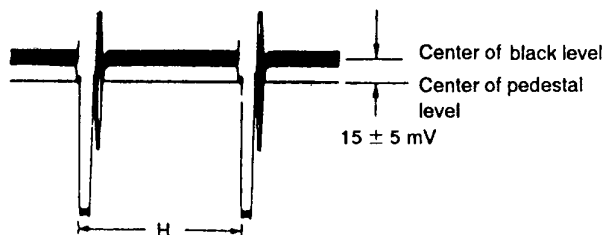


Fig. 7-21.

7-2-17. Y Level Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	18 (Y LEVEL)
Specified Value	315 ± 10 mV

Adjustment method:

- 1) Set the adjustment address to 17 with the adjustment remote controller, and make a note of the adjustment data for this address.
- 2) Set the adjustment data to FF with the adjustment remote controller.
- 3) Set the adjustment address to 18 with the adjustment remote controller.
- 4) Change the adjustment data with the adjustment remote controller to set the Y signal level to 315 ± 10 mV.
- 5) Set the adjustment address to 17 and enter the adjustment data recorded in 1).
- 6) Change the adjustment address to store the adjustment data in the memory.

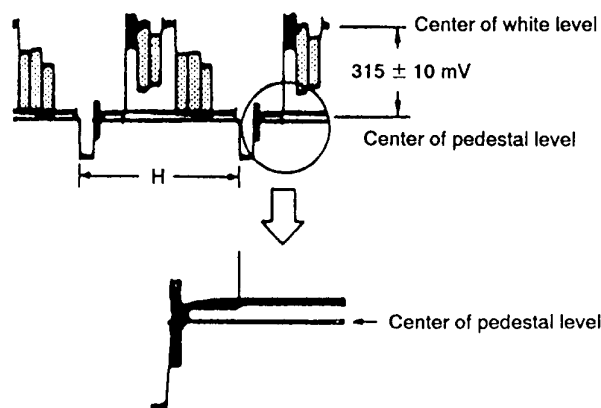


Fig. 7-22.

7-2-18. White Clip Adjustment (CV-9 Board)

Subject	High luminance pattern
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	17 (WHITE CLIP)
Specified Value	420 ± 10 mV

Adjustment method:

- 1) Set the adjustment address to 18 with the adjustment remote controller, and make a note of the adjustment data for this address.
- 2) Set the adjustment data to 40 with the adjustment remote controller.
- 3) Set the adjustment address to 17 with the adjustment remote controller.
- 4) Change the adjustment data with the adjustment remote controller to set the white clip level to 420 ± 10 mV.
- 5) Set the adjustment address to 18 and enter the adjustment data recorded in 1).
- 6) Change the adjustment address to store the adjustment data in the memory.

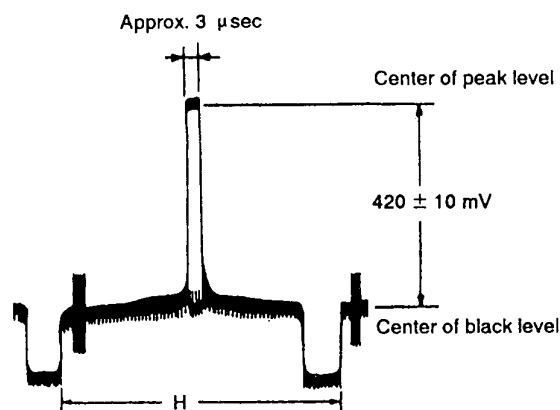


Fig. 7-23.

7-2-19. Aperture Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Emitter of Q602
Measuring Instrument	Oscilloscope
Adjustment Address	21 (APERTURE)
Specified Value	70 ± 10 mV

Adjustment method:

- 1) Focus the camera and set the aperture level (lower peak between green and white) to maximum.
- 2) Change the adjustment data to set the lower peak between green and white to 70 ± 10 mV above the pedestal level.
- 3) Change the adjustment address to store the adjustment data in the memory.

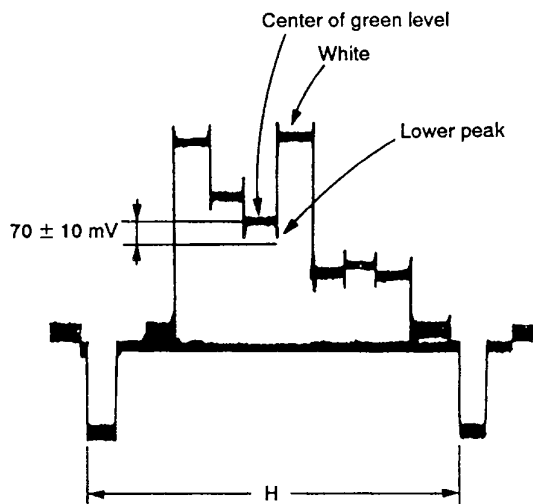


Fig. 7-24.

7-2-20. Max. Gain Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Filter	ND filters 1.0 (two) and 0.4
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	28 (MAX GAIN)
Specified Value	160 ± 10 mV

Adjustment method:

- 1) Cover the lens with the ND filter 2.4 (1.0+1.0+0.4).
- 2) Set the adjustment address to 28 with the adjustment remote controller.
- 3) Change the adjustment data with the adjustment remote controller to set the Y signal level to 160 ± 10 mV.
- 4) Change the adjustment address to store the adjustment data in the memory.

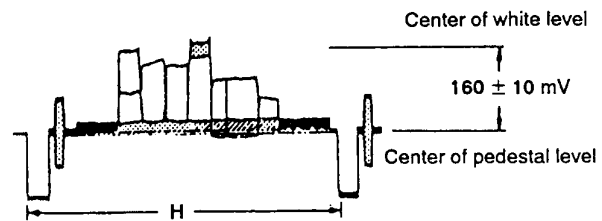


Fig. 7-25.

7-2-21. Chroma Level Adjustment (CV-9 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (A1) (G OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	09 (C LEVEL)
Specified Value	320 ± 20 mVp-p

Connections:

- 1) Connect Pin (B7) (MODE) of the check point array to GND using a jumper wire.

Adjustment method:

- 1) Set the adjustment address to 09 with the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to set the G OUT signal level to 320 ± 20 mVp-p.
- 3) Change the adjustment address to store the adjustment data in the memory.

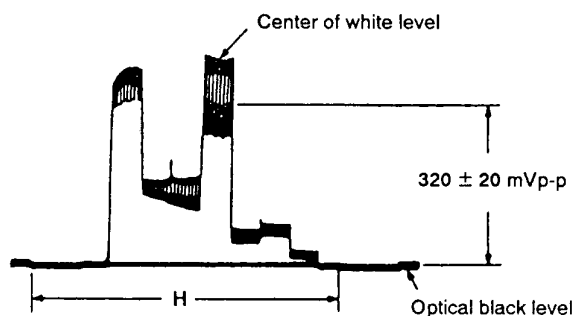


Fig. 7-26.

7-2-22. Indoor White Balance Adjustment (Method Using Vectorscope)

Subject	White pattern standard picture frame
Measurement Point	Video output terminals
Measuring Instrument	Vectorscope
Adjustment Address	11 (R GAIN) 12 (B GAIN)
Specified Value	The white luminance point is within a circle with a diameter of 1 mm centered around the origin.

Adjustment method:

- 1) Set the adjustment address to 11 with the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to move the white luminance point to the origin point.
- 3) Set the adjustment address to 12.
- 4) Change the adjustment data to move the white luminance point to the origin point.
- 5) Repeat steps 1) through 4).
- 6) Change the adjustment address to store the adjustment data in the memory.

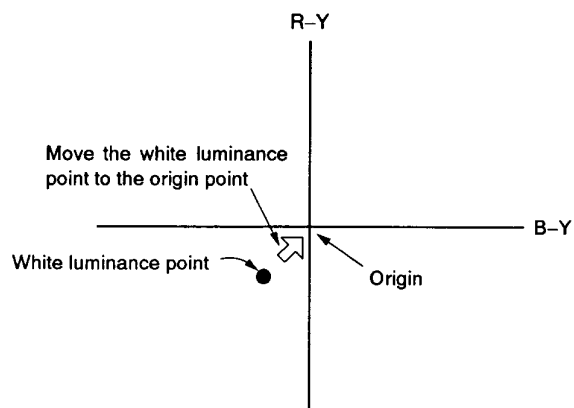


Fig. 7-27.

7-2-23. Indoor White Balance Adjustment (Method Using Oscilloscope) (CV-9 Board)

Subject	White pattern
Measurement Point	CH1 (X): Pin (B2) (B-Y) of check point array or emitter of Q642 CH2 (Y): Pin (B1) (R-Y) of check point array or emitter of Q614
Measuring Instrument	Oscilloscope (X-Y mode)
Adjustment Address	11 (R GAIN) 12 (B GAIN)
Specified Value	Move the white luminance point to the black luminance point.

Adjustment method:

- 1) Set the adjustment address to 11 with the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to move the white luminance point with the black luminance point.
- 3) Set the adjustment address to 12.
- 4) Change the adjustment data to move the white luminance point to the black luminance point.
- 5) Repeat steps 1) through 4).
- 6) Change the adjustment address to store the adjustment data in the memory.

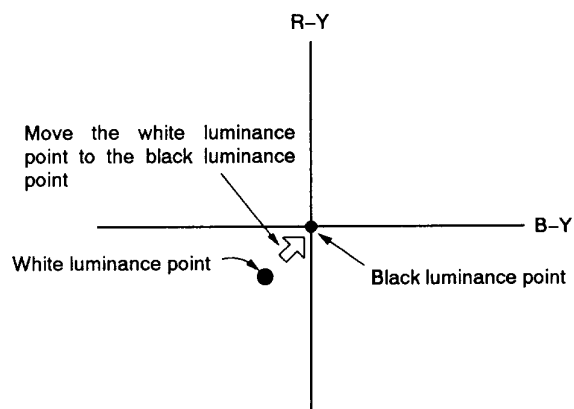


Fig. 7-28.

7-2-24. Burst Phase Adjustment (Method Using Vectorscope)

Subject	All black (cover lens with black cap)
Measurement Point	Video output terminals
Measuring Instrument	Vectroscope
Adjustment Address	16 (HUE CONT)
Specified Value	$135^\circ \pm 1^\circ$

Adjustment method:

- 1) Set adjustment address to 16 with the adjustment remote controller.
- 2) Change adjustment data so as to set the burst luminance point in the $135^\circ \pm 1^\circ$ position.
- 3) Change the adjustment address to store the adjustment data in the memory.
- 4) Perform Burst Level Adjustment.

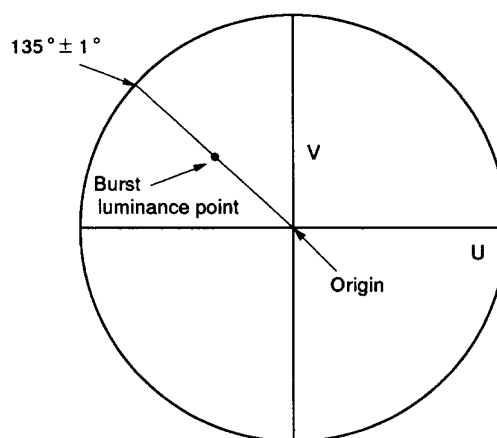


Fig. 7-29.

7-2-25. Burst Phase Adjustment (CV-9 Board) (Method Using Oscilloscope)

Subject	All black (cover lens with black cap)
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope (Trigger slope: +)
Adjustment Address	16 (HUE CONT)
Specified Value	Burst phase should become a single line.

Adjusting method:

- 1) Set adjustment address to 16 with the adjustment remote controller.
- 2) Change the adjustment data so as to turn the burst waveform into a single line.
- 3) Change the adjustment address to store the adjustment data in the memory.
- 4) Perform Burst Level Adjustment.

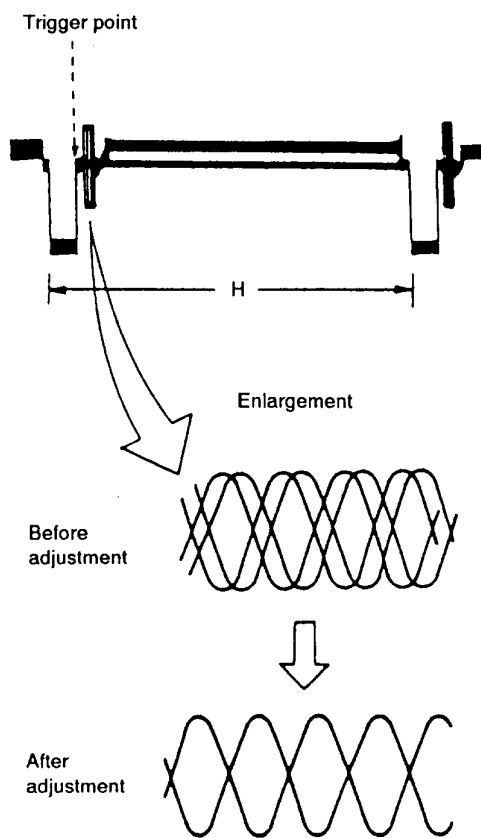


Fig. 7-30.

7-2-26. Burst Level Adjustment (CV-9 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	22 (BURST LEVEL)
Specified Value	150 ± 5 mVp-p

Adjustment method:

- 1) Set the adjustment address to 22 with the adjustment remote controller.
- 2) Change the adjustment data with the adjustment remote controller to set the burst level to 150 ± 5 mVp-p.
- 3) Change the adjustment address to store the adjustment data in the memory.

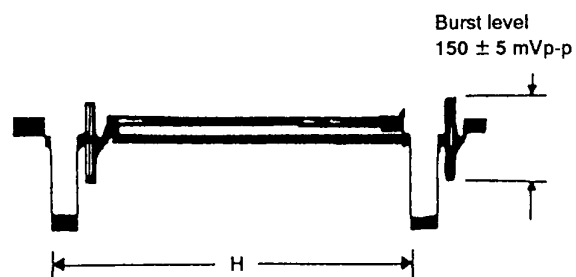


Fig. 7-31.

7-2-27. Color Reproduction Adjustment (Method Using Vectorscope)

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminals
Measuring Instrument	Vectorscope
Adjustment Address	05 (R-Y GAIN) 06 (B-Y GAIN) 07 (R-Y HUE) 08 (B-Y HUE)
Specified Value	All color luminance points are within color reproduction frame.

Note: Confirm that Burst Phase Adjustment, Burst Level Adjustment and Indoor White Balance Adjustment have been completed.

Adjustment method:

- 1) Adjust the phase and gain of the vectorscope to set the burst luminance points to the designated position on the color reproduction frame.
- 2) Change the adjustment data at the various adjustment addresses using the adjustment remote controller until all color luminance points are within the color reproduction frame.
- 3) Change the adjustment address to store the adjustment data in the memory.

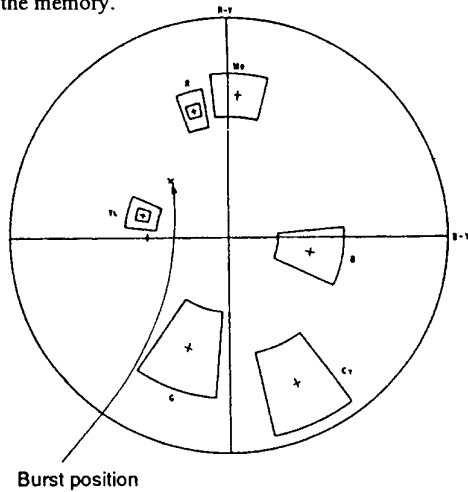


Fig. 7-32.

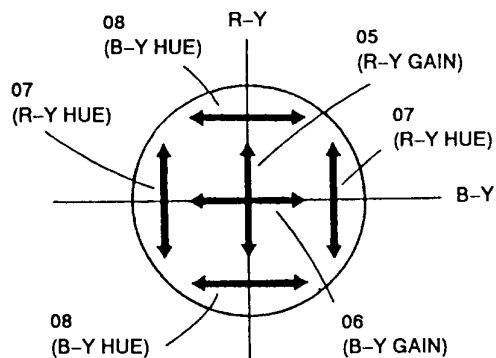


Fig. 7-33. Adjustment address and direction of luminance point movement

7-2-28. Color Reproduction Adjustment (Method Using Oscilloscope)

1. Gain adjustment (CV-9 board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (B8) (VIDEO OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	05 (R-Y GAIN) 06 (B-Y GAIN)
Specified Value	Red level: 263 ± 16 mVp-p Yellow level: 175 ± 12 mVp-p

Note: Confirm that Indoor White Balance Adjustment has been completed.

Adjustment method:

- 1) Set the adjustment address to 06 with the adjustment remote controller and set the adjustment data to B0.
- 2) Set the adjustment address to 07 and set the adjustment data to B0.
- 3) Set the adjustment address to 08 and set the adjustment data to B0.
- 4) Set the adjustment address to 05 and change the adjustment data to set the chroma signal red level to 263 ± 16 mVp-p.
- 5) Set the adjustment address to 06 and change the adjustment data to set the chroma signal yellow level to 175 ± 12 mVp-p.
- 6) Repeat steps 4) and 5).
- 7) Change the adjustment address to store the adjustment data in the memory.
- 8) Perform Hue Adjustment.

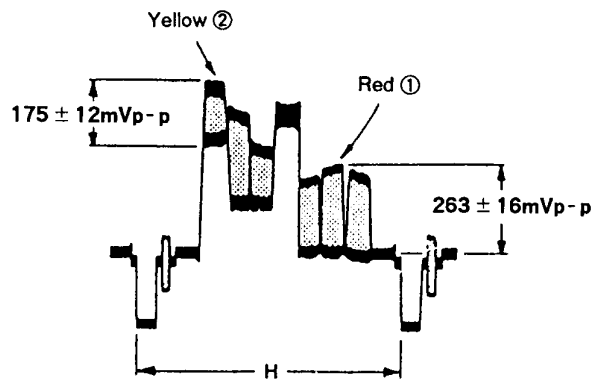


Fig. 7-34.

2. Hue adjustment

Subject	Color bar chart standard picture frame
Measurement Point	CH1 (X): Pin (B2) (B-Y) of check point array or emitter of Q642 CH2 (Y): Pin (B1) (R-Y) of check point array or emitter of Q614
Measuring Instrument	Oscilloscope (X-Y mode)
Adjustment Address	07 (R-Y HUE) 08 (B-Y HUE)
Specified Value	Various color luminance points within color reproduction frame.

Note: Make sure that Indoor White Balance Adjustment has been completed.

Adjustment method:

- 1) Move the black luminance point on the oscilloscope to the origin point of the color reproduction frame.
- 2) Change the adjustment data at adjustment addresses 07 and 08 with the adjustment remote controller to bring the various color luminance points into the color reproduction frame.
- 3) Check the hue reproduced on the monitor TV and fine adjust the adjustment data at adjustment addresses 07 and 08 if necessary.
- 4) Change the adjustment address to store the adjustment data in the memory.

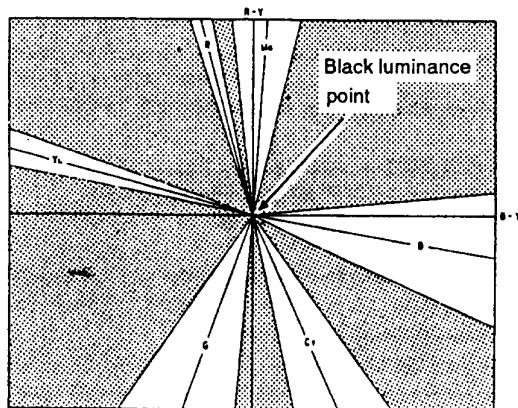


Fig. 7-35.

7-2-29. Auto White Balance Adjustment

Note: Be sure to first perform Preset Adjustment followed by Auto White Balance Adjustment.

1. Preset adjustment (CV-9 board)

Subject	White pattern standard picture frame
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- Note:**
- 1) Perform preset adjustment after supplying power to the unit for at least 30 seconds.
 - 2) When performing preset adjustment again, repeat after first turning the power off and then back on.

Preparations:

- 1) Prepare a 1 k Ω resistor for connecting Pin (B5) (AWB ADJ) of the check point array and Pin ④ (CAM 5V) of W902.

Adjustment method:

- 1) Turn the power OFF and then ON, and connect Pin (B6) (CAM ADJ) of the check point array to GND using a jumper wire.
- 2) Select adjustment address 89 (AWB MODE) and set the adjustment data to E0. Wait at least five seconds.
- 3) Change the adjustment address to store the adjustment data in the memory. Wait at least five seconds.
- 4) Remove the jumper wire between Pin (B6) (CAM ADJ) of the check point array and GND.
- 5) Connect Pin (B5) (AWB ADJ) of the check point array and Pin ④ of W902 (CAM 5V) with a 1 k Ω resistor.
- 6) Connect Pin (B6) (CAM ADJ) of the check point array to GND using a jumper wire.
- 7) Confirm that the indication (adjustment address 01) of the adjustment remote controller is changed.
- 8) Remove the jumper wire connected to Pin (B6) (CAM ADJ) of the check point array after allowing one second or more to elapse.
- 9) Remove the 1 k Ω resistor connected to Pin (B5) (AWB ADJ) of the check point array.
- 10) Connect Pin (B6) (CAM ADJ) of the check point array to GND using a jumper wire.

2. Auto white balance adjustment (CV-9 board)

Note: Be sure to perform this adjustment after completing Preset Adjustment.

Subject	White pattern standard picture frame
Filter	Filter C14 for color temperature correction
Measuring Instrument	Oscilloscope (X-Y Mode)
Measurement Point	CH1 (X): Pin (B2) (B-Y) of check point array or emitter of Q642 CH2 (Y): Pin (B1) (R-Y) of check point array or emitter of Q614
Adjustment Address	01 (DELTA R) 02 (DELTA B) 80 (R OUTDOOR) 81 (B OUTDOOR) 77 (B UP LIMIT) 78 (R OUT LIMIT) 79 (B OUT LIMIT) 65 (TOP SLP R) 66 (TOP SLP R) 73 (TOP UP) 74 (TOP DWN)
Specified Value	Move the white luminance point to the black luminance point.

Note: 1) Make connection to the video output terminals when the vectorscope is used.

2) All calculations in this section are made in decimal.

Adjustment method:

- 1) Select adjustment address 89 (AWB MODE) with the adjustment remote controller and enter adjustment data of 10.
- 2) Change the adjustment data of adjustment addresses 01 and 02 with the adjustment remote controller to move the white luminance point and black luminance point.
(Move the white luminance point to pthe origin point when using the vectorscope.)
The adjustment data of adjustment address 01 is D1 and the adjustment data of adjustment address 02 is D2.
- 3) Select adjustment address 78 to enter adjustment data D1.
- 4) Convert adjustment data D1 to decimal to obtain D1'.
Convert adjustment data D2 to decimal to obtain D2'.
(See Table 7-5 Hexadecimal-Decimal Conversion Table)
- 5) Obtain D80' and D81' by the following formula.
 $D80' = D1' + 1$
 $D81' = D2' + 3$
- 6) Convert D80' and D81' to hexadecimal and call this value D80 and D81.
- 7) Select adjustment address 80 and enter adjustment data D80.
Select adjustment address 81 and enter adjustment data D81.
(Outdoor white balance adjustment.)

- 8) Obtain D77' by the following formula.
 $D77' = (D2' \times 1.9) - 43.2$
- 9) Convert D77' to hexadecimal and call this value D77.
(Round off the decimal portion)
- 10) Select adjustment address 77 with the adjustment remote controller and enter adjustment data D77.
- 11) Obtain D79' by the following formula.
 $D79' = D2' + 10$
- 12) Convert D79' to hexadecimal and call this value D79.
- 13) Select adjustment address 79 with the adjustment remote controller and enter adjustment data D79.
- 14) Obtain d' by the following formula.
 $d' = (D1' \times 5) + D2'$
The adjustment procedure in 15) through 17) varies according to the value of d'.

[d' > 308]

- 15) Obtain D73' and D74' by the following formulas.
 $D73' = (D1' \times 3) + (D2' \div 2) + 30$
 $D74' = D73' - 44$
- 16) Convert D73' and D74' to hexadecimal and call these values D73 and D74.
(Round off the decimal portion)
- 17) Use the adjustment remote controller to enter the adjustment data shown in the table below for the indicated adjustment addresses.

Adjustment address	Adjustment data
65	20
66	01
73	D73
74	D74

Perform the adjustment steps beginning from 18).

[308 ≥ d' ≥ 278]

- 15) Obtain D73' and D74' by the following formulas.
 $D73' = (d' \div 2) + 25$
 $D74' = D73' - 41$
- 16) Convert D73' and D74' to hexadecimal and call these values D73 and D74.
(Round off the decimal portion)
- 17) Use the adjustment remote controller to enter the adjustment data shown in the table below for the indicated adjustment addresses.

Adjustment address	Adjustment data
65	41
66	01
73	D73
74	D74

Perform the adjustment steps beginning from 18).

[278 > d']

- 15) Obtain $D73'$ and $D74'$ by the following formulas.
 $D73' = (D1' \times 3) + D2' + 30$
 $D74' = D73' - 44$
- 16) Convert $D73'$ and $D74'$ to hexadecimal and call these values $D73$ and $D74$. (Round off the decimal portion)
- 17) Use the adjustment remote controller to enter the adjustment data shown in the table below for the indicated adjustment addresses.

Adjustment address	Adjustment data
65	20
66	00
73	$D73$
74	$D74$

- 18) Select adjustment address 89 and enter adjustment data 00.
- 19) Select adjustment address 89 and enter adjustment data F0.
- 20) Change the adjustment data of adjustment addresses 01 and 02 with the adjustment remote controller to move the white luminance point and black luminance point.
 (Move the white luminance point to the origin point when using the vectorscope.)
- 21) Select adjustment address 89 and enter adjustment data of 00.
- 22) Change the adjustment address to store the adjustment data in the memory.

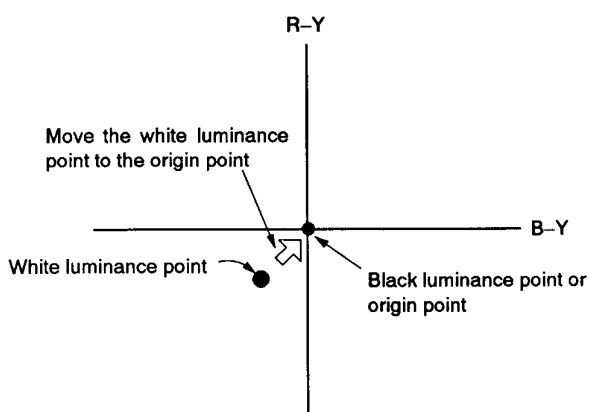


Fig. 7-36.

(Example)

When the adjustment data obtained in Step 2) has the following values.

Adjustment address	Adjustment data
01	2A
02	53

→ Entered into adjustment address 78.

$D1=2A$ and $D2=53$ when there is conversion to decimal using Table 7-5.

$D1'=42$

$D2'=83$

Thus,

$$D80' = 42 + 1 = 43$$

$$D81' = 83 + 3 = 86$$

$$D77' = (83 \times 1.9) - 43.2 = 114.5$$

Rounding off the decimal portion and converting to hexadecimal by Table 7-5 results in,

$D80=2B \rightarrow$ Entered into adjustment address 80.

$D81=56 \rightarrow$ Entered into adjustment address 81.

$D77=73 \rightarrow$ Entered into adjustment address 77

In the same manner,

$$D79' = (83 + 10) = 93$$

$D79=5D \rightarrow$ Entered into adjustment address 79

In addition,

$$d' = (42 \times 5) + 83 = 293$$

Thus, $[308 \geq d' \geq 278]$

$$D73' = (293 \div 2) + 25 = 171.5$$

$\therefore D73=AC \rightarrow$ Entered into adjustment address 73

$$D74' = 171.5 - 41 = 130.5$$

$\therefore D74=83 \rightarrow$ Entered into adjustment address 74

Also, adjustment data of 41 is entered into adjustment address 65, and adjustment data of 01 is entered into adjustment address 66.

The steps beginning from 18) are then performed.

7-2-30. Outdoor White Balance Confirmation (CV-9 Board)

Subject	White pattern standard picture frame
Filter	Filter C14 for color temperature correction
Measurement Point	When vectorscope used: video output terminals When oscilloscope used: CH1 (X): Pin (B2) (B-Y) of check point array or emitter of Q642 CH2 (Y): Pin (B1) (R-Y) of check point array or emitter of Q614
Measuring Instrument	
Specified Value	See Fig. 7-37.

Connections:

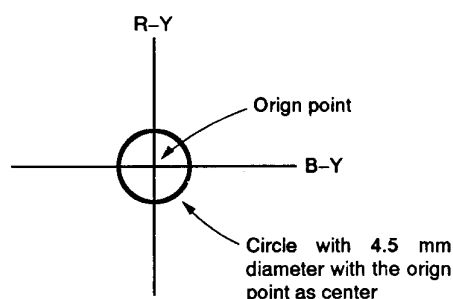
- 1) Remove the jumper wire connected to Pin (B6) (CAM ADJ) of the check point array. (Turns off the EVR adjustment mode)

Checking method:

- 1) Press the white balance button to select the outdoor white balance mode. (* mark is displayed on EVF screen or monitor TV screen (when data screen ON).)
- 2) Confirm that the center of the white luminance point is within the circle shown in the figure below.

Note: When using a vectorscope, adjust the GAIN and PHASE of the vectorscope so that burst luminance point move to with the burst position of the color reproduction frame.

[When using vectorscope]



[When using oscilloscope]

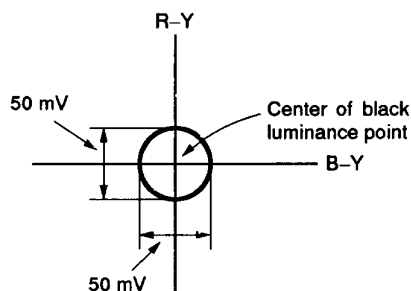


Fig. 7-37.

7-2-31. Focus Motor Speed Adjustment (CV-9 Board)

Subject	Arbitrary
Measurement Point	CN803
Measuring Instrument	AF microcomputer data reading jig
Adjustment Address	A26 (FOCUS SPEED)
Specified Value	Average value of data indicated on jig=7.0 ± 0.5

Remarks: The rotation time from the close extreme to far extreme of the focus ring should be approximately 2.1 seconds after completion of adjustment.

Adjustment method:

- 1) Turn on the auto focus with FOCUS button (S655 on CK-43P board).
- 2) Select adjustment address 37 with the adjustment remote controller and enter adjustment data of 01. (Sets hunching mode)
- 3) Set the adjustment address to 26.
- 4) Change the adjustment data so that the indication on the AF microcomputer data reading jig is 07 while the ring is rotating.
- 5) Press the HOLD button of the AF microcomputer data reading jig while the focus ring is rotating to read the indication value.
- 6) Repeat step 4) ten times and obtain the average value.
Specified value=7.0 ± 0.5
Repeat steps 3) and 4) if the specified value is not satisfied.
- 7) Set the adjustment address to 37 and set the adjustment data to 00. (Releases hunching mode)
- 8) Change the adjustment address to store the adjustment data in the memory.

7-2-32. Macro Area Adjustment (CV-9 Board)

Subject	Arbitrary
Measurement Point	CN803
Measuring Instrument	AF microcomputer data reading jig
Adjustment Address	39 (MACRO)
Specified Value	(Value at WIDE position) -1

Adjustment method:

- 1) Set the zoom ring to the WIDE position (7 mm position).
- 2) Select adjustment address 37 with the adjustment remote controller and set the adjustment data to 03. (Sets zoom position indication mode)
- 3) Read the data indicated on the AF microcomputer data reading jig. (Data in the range of 00 to 0E is displayed if normal.)
- 4) Change the adjustment address to 39.
- 5) Subtract 1 from the data read from jig and enter as the adjustment data.
- 6) Change the adjustment address to 37 and set the adjustment data to 00. (Releases zoom position indication mode)
- 7) Change the adjustment address to store the adjustment data in the memory.

7-2-33. Auto-Focus Adjustment

1. Adjustment In all black pattern (CV-9 board)

Subject	All black (cover lens with black cap)
Measurement Point	CN803
Measuring Instrument	AF microcomputer data reading jig
Adjustment Address	42 (FH B), 54 (AGC B)

Adjustment method:

- 1) Turn off the auto-focus with the FOCUS button (S655 on CK-43P board).
- 2) Select adjustment address 37 with the adjustment remote controller and enter adjustment data of FF.
- 3) Read the indication on the AF microcomputer data reading jig and confirm this value (FH B). (FH B should be 00 to 1C.)
- 4) Select adjustment address 42 with the adjustment remote controller and enter the value (FH B) as the adjustment data.
- 5) Select adjustment address 37 with the adjustment remote controller and enter adjustment data of 0B.
- 6) Read the data indicated on the AF microcomputer data reading jig and call this value AGC B.
- 7) Select adjustment address 54 with the adjustment remote controller and enter the value (AGC B) as the adjustment data.
- 8) Select adjustment address 37 and enter adjustment data of 00.
- 9) Change the adjustment address to store the adjustment data in the memory.
- 10) Perform "Adjustment in white pattern".

2. Adjustment In white pattern (CV-9 board)

Subject	White pattern standard picture frame (Position 1.5 m from the front of the lens reference plane (Φ mark))
Measurement Point	CN803
Measuring Instrument	AF microcomputer data reading jig
Adjustment Address	52 (FH W), 53 (AGC W)

Measurement method:

- 1) Confirm that the white pattern is not soiled.
- 2) Confirm that the auto-focus is turned off.
- 3) Select adjustment address 37 with the adjustment remote controller and enter adjustment data of FF.
- 4) Read the indication of the AF microcomputer data reading jig and confirm this value (FH W). (FH W should be 00 to 0F)
- 5) Select adjustment address 52 with the remote controller and enter the value (FH W) as the adjustment data.
- 6) Select adjustment address 37 with the adjustment remote controller and enter adjustment data of 0B.
- 7) Read the data indicated on the AF microcomputer data reading jig and call this value AGC W.
- 8) Select adjustment address 53 with the adjustment remote controller and enter the value (AGC W) as the adjustment data.
- 9) Select adjustment address 37 and enter adjustment data of 00.
- 10) Change the adjustment address to store the adjustment data.

7-2-34. Auto-Focus Confirmation

Subject	Siemens star (position 1.5m from the front of the lens reference plane ("Φ" mark))
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Note: Perform adjustment with the EVF (electronic viewfinder) attached.

Measuring method:

- 1) Place the Siemens star 1.5m from the front of the lens reference surface (See Fig. 7-2).
- 2) Set the zoom lever to the TELE position (42 mm) and turn on auto focus with the FOCUS button.
- 3) Adjust the direction of the camera so that center of the Siemens star is lined up with the center of the monitor screen on the monitor TV screen.
- 4) To open the iris, reduce the illumination of the Siemens star. (Or cover lens with the ND filter)
- 5) Turn off the auto-focus with the FOCUS button.
- 6) Manually rotate the focus ring to set the focus. Confirm that the focus mark is inside the range shown in Fig. 7-38 at this time.
Perform Flange Back Adjustment if this condition is not satisfied.
- 7) Rotate the focus ring to the close extreme (1.1m).
- 8) Turn on the auto-focus with the FOCUS button.
- 9) Confirm that there is focusing within two seconds and a sharp image can be obtained.
- 10) Turn off the auto-focus and rotate the focus to the far extreme (∞).
- 11) Turn on the auto-focus.
- 12) Confirm that there is focusing within three seconds and a sharp image can be obtained.

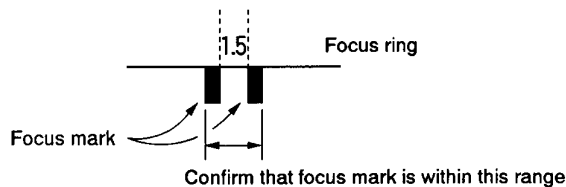


Fig. 7-38.

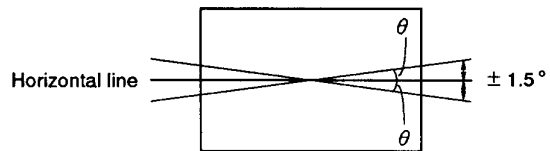
7-3. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT(TYPE A) (VF-14P BOARD)

7-3-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Specified Value	See Fig. 7-39.

Adjustment method:

- 1) By turning RV904 (BRIGHT), adjust for a luminance level which provides appropriate visibility of the CRT screen.
- 2) Loosen the DY (deflection yoke) tightening nut.
- 3) Make the image horizontal by rotating DY.
- 4) Retighten the DY tightening nut. (Do not tighten excessively.)



Specified value: Image orientation within $\pm 1.5^\circ$ of horizontal line.

Fig. 7-39.

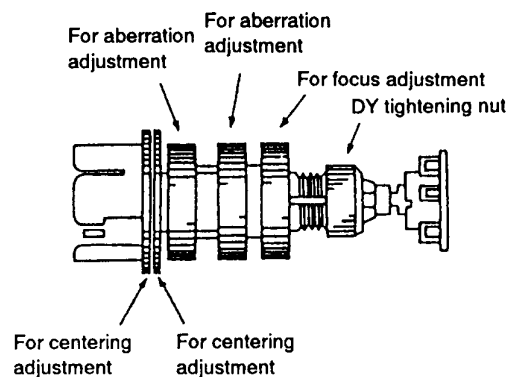


Fig. 7-40.

7-3-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Specified Value	See Fig. 7-41.

Adjustment method:

- 1) Turn the centering adjustment rings to provide an image with even right, left, upper and lower margins. (See Fig. 7-40.)

Note: Since the centering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation which exhibits median displacements of the image.

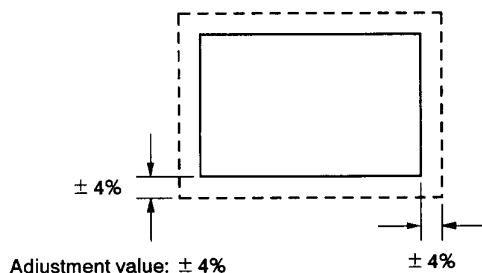


Fig. 7-41.

7-3-3. Focus Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion

Adjustment method:

- 1) Adjust for optimum focus using the focus ring. (See Fig. 7-40.)

7-3-4. Aberration Adjustment

Mode	E-E
Signal	Dot pattern
Specified Value	See Fig. 7-42.

Adjustment method:

- 1) Use the aberration adjustment rings to adjust any trailing dots to within 2 times the dot diameter and any fan shaped aberrations to within the dot diameter.
- 2) If off center, repeat the Centering Adjustment.

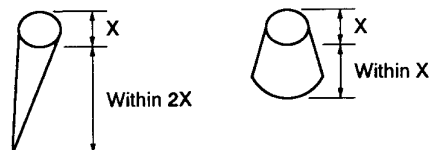


Fig. 7-42.

7-3-5. Horizontal Oscillation Frequency Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP)
Measurement Point	Positive terminal of C904
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjustment Element	RV901
Specified Value	2.60 ± 0.05 Vdc

Adjustment method:

- 1) Adjust to 2.60 ± 0.05 Vdc using RV901.

7-3-6. Horizontal Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	C911
Specified Value	$6 \pm 3\%$

Adjustment method:

- 1) Line up the upper and lower sections of the monoscope image with the upper and lower edges of the screen by rotating RV902.
- 2) Rotate RV904 to set the brightness to the normal level.
- 3) Short or open the pattern (A) of the H size adjustment capacitor (C911) to provide horizontal overscans of $6 \pm 3\%$ (total of left and right).
(See Fig. 7-44.)

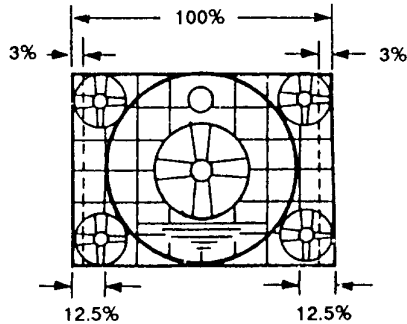
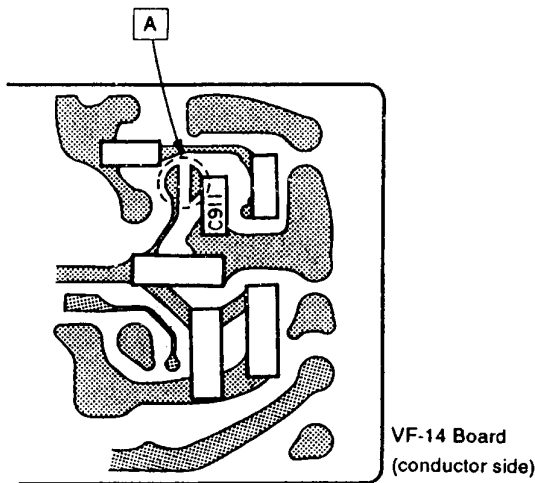


Fig. 7-43.



A section	H size
Open	Large
Short	Small

Fig. 7-44.

7-3-7. Vertical Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	RV902
Specified Value	$5 \pm 3\%$

Adjustment method:

- 1) By turning RV902, adjust vertical overscan to $5 \pm 3\%$ (upper and lower total).

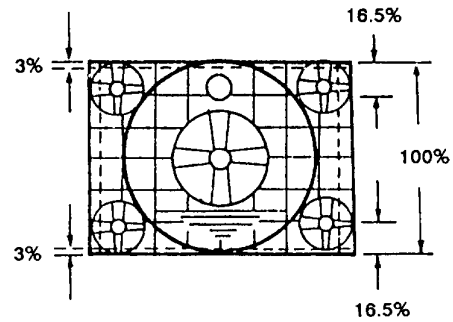


Fig. 7-45.

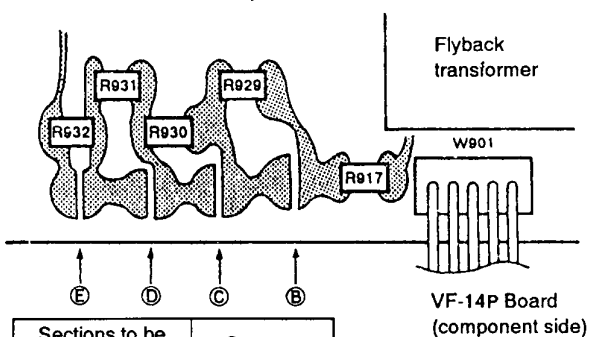
7-3-8. Brightness, Contrast Adjustments

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	Brightness: RV904 Contrast: see Fig. 7-46.

Adjustment method:

- 1) Perform brightness and contrast adjustments alternately until the bright and dark areas of a gray scale are displayed correctly. (The bright areas should not be made too bright to avoid a fuzzy display of the cross-hatches in the monoscope circle, and the brightness of the dark areas should be such that discrimination between the darkest and second darkest area is possible.)

Use sections B to E of VF-14P board to open and short for contrast adjustment.



Sections to be shorted	Contrast
D and E	High
E	
D	
All open	
C	
B	
B and C	Low

Fig. 7-46.

7-3-9. Horizontal Amplitude, Vertical Amplitude and Focus Checks

Values should conform to specifications given in 7-3-6. Horizontal Amplitude Adjustment and 7-3-7. Vertical Amplitude Adjustment. If not, readjust accordingly, and repeat 7-3-8. Brightness, Contrast Adjustments. In this case, focus needs to be checked. If the image is not clear, perform 7-3-3. Focus Adjustment and 7-3-4. Aberration Adjustment.

7-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT (TYPE B) (VF-22P BOARD)

7-4-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Specified Value	See Fig. 7-48.

Adjustment method:

- 1) Adjust the volume array ① (BRIGHT) for appropriate brightness on CRT screen. (See Fig. 7-49.)
- 2) Loosen the DY (deflection yoke) tightening nut. (See Fig. 7-47.)
- 3) Make a picture horizontal by turning the DY.
- 4) Retighten the nut. (Do not tighten excessively.)

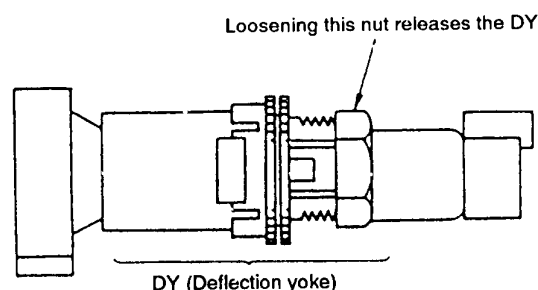
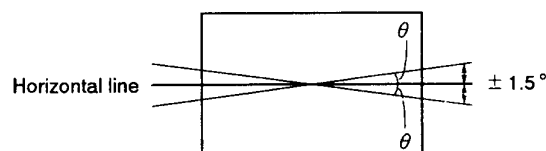


Fig. 7-47.



Specified value: Image orientation within $\pm 1.5^\circ$ of horizontal line.

Fig. 7-48.

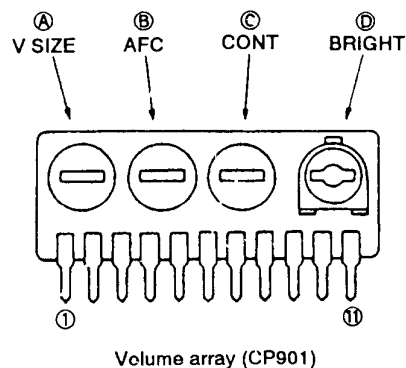


Fig. 7-49.

7-4-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Specified Value	See Fig. 7-51.

Adjustment method:

- 1) Turn the centering adjustment rings to provide an image with even right, left, upper and lower margins. (See Fig. 7-50.)

Note: Since the centering position is affected by the earth magnetism, turn the equipment over 360 ° horizontally, and make adjustments at the orientation which exhibits median displacements of the image.

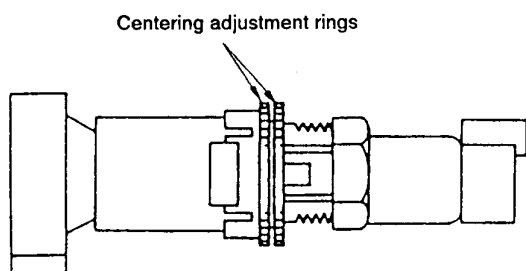


Fig. 7-50.

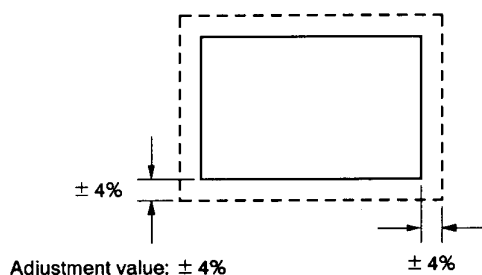


Fig. 7-51.

7-4-3. AFC Adjustment

Mode	E-E or Camera standby
Signal	Color bar
Measurement Point	C915 ⊕ side
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjustment Element	Volume array ⑧ (AFC)
Specified Value	2.6 ± 0.2 Vdc

Adjustment method:

- 1) Adjust volume array ⑧ (AFC) for 2.6 ± 0.2 Vdc. (See Fig. 7-49.)

7-4-4. Horizontal Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	C905
Specified Value	6 ± 3%

Adjustment method:

- 1) Line up the upper and lower sections of the monoscope image with the upper and lower edges of the screen by rotating volume array ① (V SIZE). (See Fig. 7-49.)
- 2) Rotate volume array ② (BRIGHT) to set the brightness to the normal level.
- 3) Short or open the pattern [A] of the H size adjustment capacitor (C905) to provide horizontal overscans of 6 ± 3% (total of left and right). (See Fig. 7-53.)

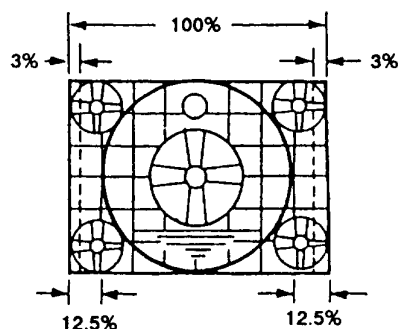
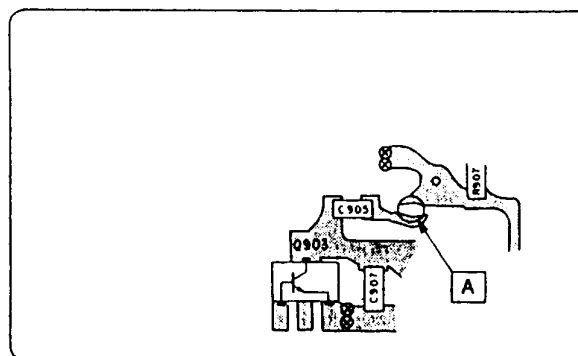


Fig. 7-52.



VF-22P board (conductor side)

A section	H size
Open	Large
Short	Small

Fig. 7-53.

7-4-5. Vertical Amplitude Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	Volume array Ⓐ (V SIZE)
Specified Value	$5 \pm 3\%$

Adjustment method:

- 1) By turning volume array Ⓐ (V SIZE), adjust vertical overscan to $5 \pm 3\%$ (upper and lower total). (See Fig. 7-49.)

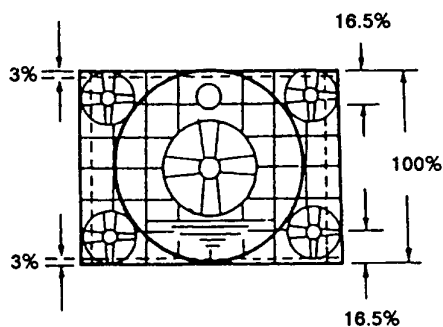


Fig. 7-54.

7-4-6. Focus Adjustment

Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	RV901

Adjustment method:

- 1) Adjust to the best focus point with RV901.

7-4-7. Brightness, Contrast Adjustments

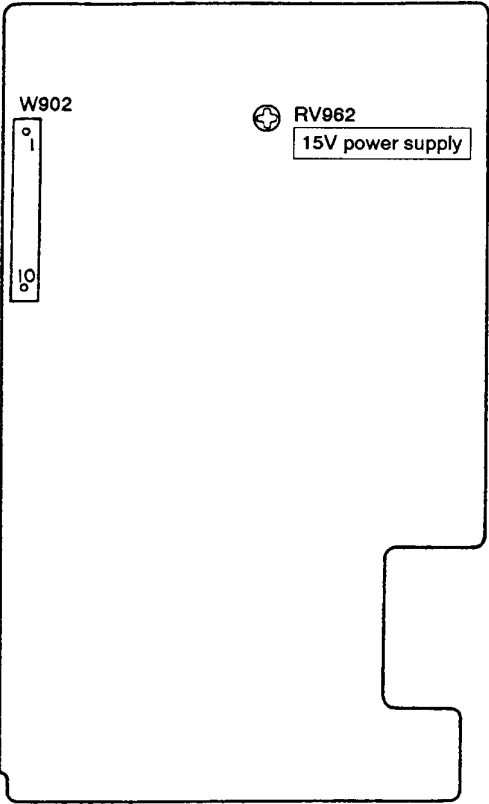
Mode	Playback
Signal	Alignment tape for checking operation (WR5-5CSP) Monoscope portion
Adjustment Element	Brightness: Volume array Ⓓ (BRIGHT) Contrast: Volume array Ⓒ (CONT)

Adjustment method:

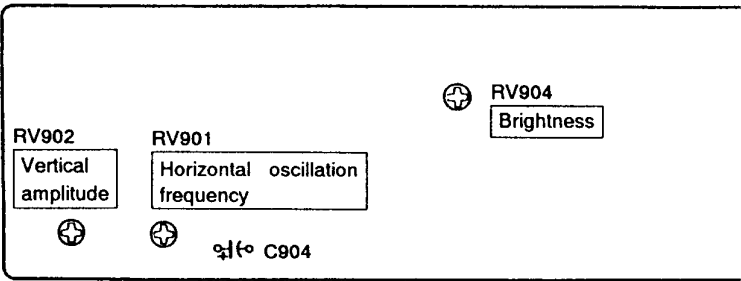
- 1) Adjust volume array Ⓓ (BRIGHT) and Ⓒ (CONT) alternately until the bright and dark areas of a gray scale are displayed correctly. (The bright areas should not be made too bright to avoid a fuzzy display of the cross-hatches in the monoscope circle, and the brightness of the dark areas should be such that discrimination between the darkest and second darkest area is possible.) (See Fig. 7-49.)

7-5. ADJUSTMENT ELEMENTS LOCATION

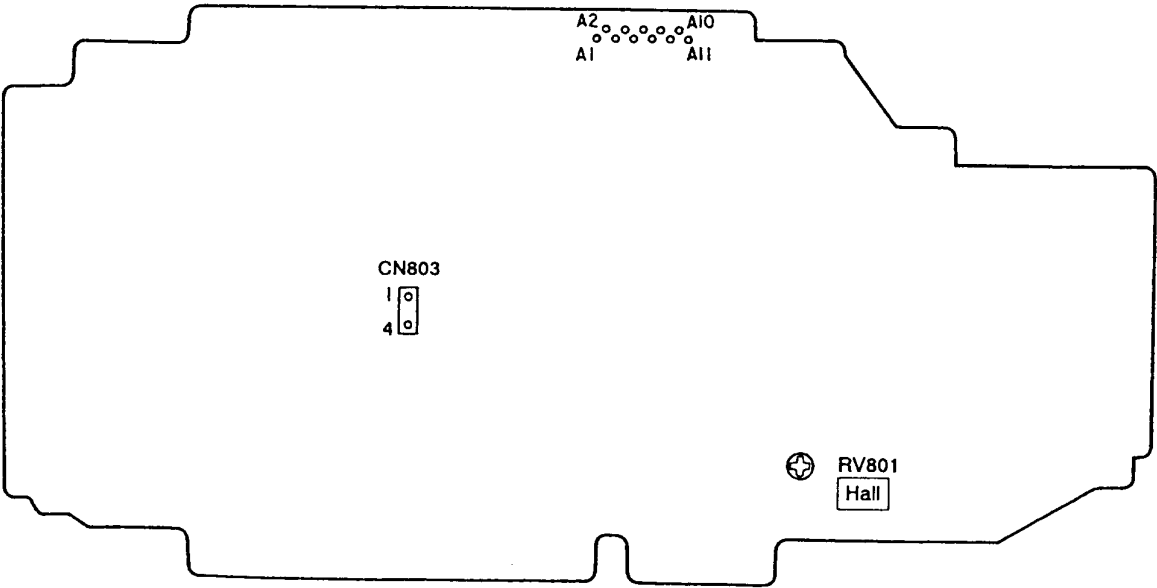
PS-263P BOARD (COMPONENT SIDE)



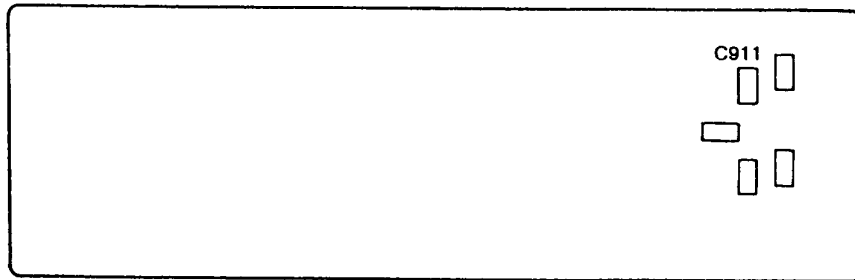
VF-14P BOARD (COMPONENT SIDE)



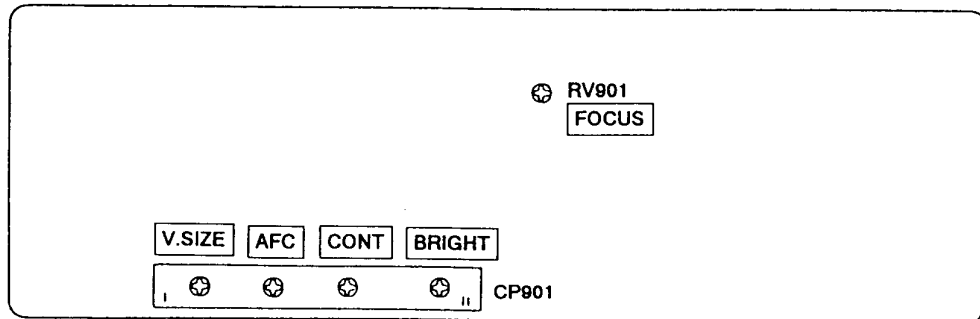
CV-9 BOARD (COMPONENT SIDE)



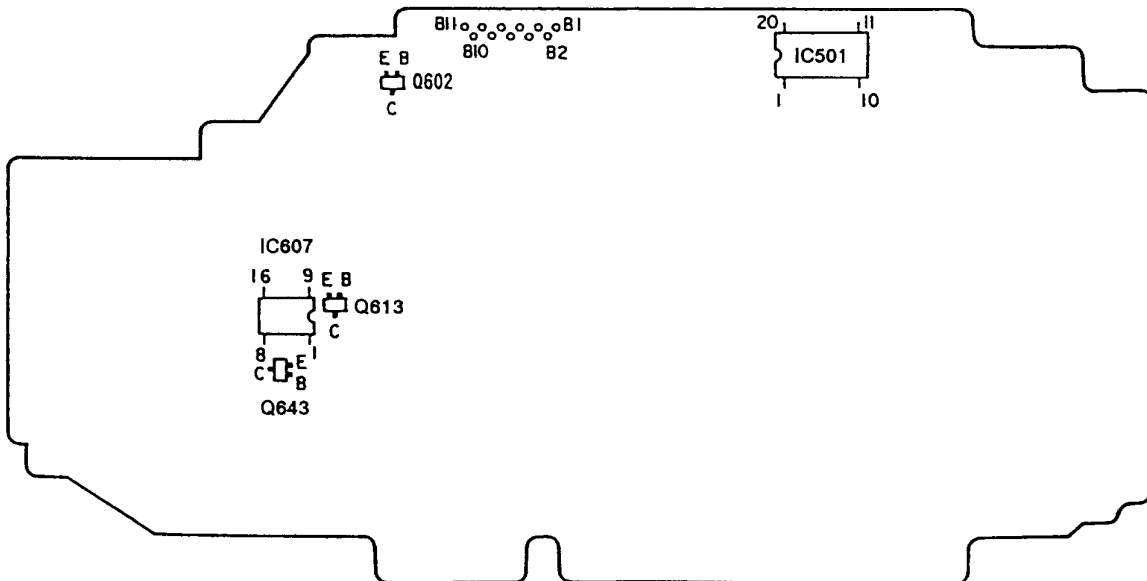
VF-14P BOARD (CONDUCTOR SIDE)



VF-22P BOARD (COMPONENT SIDE)



CV-9 BOARD (CONDUCTOR SIDE)



SECTION 8

MECHANISM BLOCK ADJUSTMENTS

Mechanism Block Adjustments

Refer to the separate "8mm Video Mechanical Adjustment Manual III U Mechanism" for adjustment and checking of the mechanism block and for replacement of mechanical parts.
Refer to the following for setting of track shift mode.

8-1. TRACK SHIFT MODE SETTING

[Setting method]

- Connect the TEST A terminal and TEST B terminal to the COM terminal. Connect Pin ① and Pin ③ of CN508 on the VK-11P board to Pin ②. (See Fig. 8-1.)

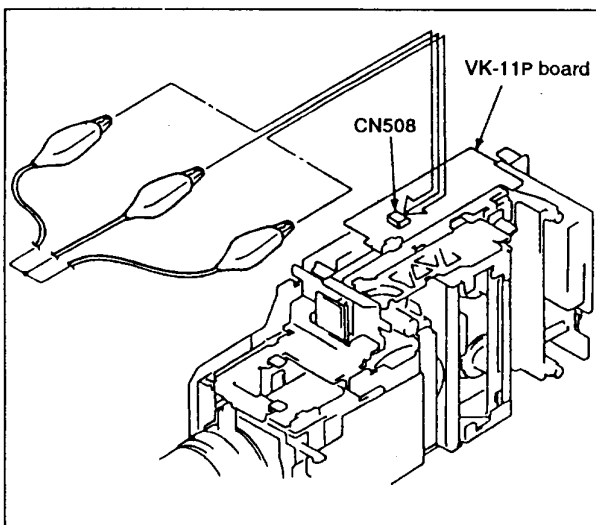


Fig. 8-1.

8-2. PREPARATION FOR ADJUSTMENT

- 1) Perform cleaning of the tape running surface (tape guides, drums, capstan shafts, and pinch rollers).
- 2) Connection of oscilloscope
CH 1: RF signal output (V RF OUT) of drum head
Pin ③ (V RF OUT) of CN102 on the CO-2P board
External trigger: External trigger output (RF SW.P)
Pin ④ of CN102 on the CO-2P board.
- 3) Play back the alignment tape (WR5-1CP, Ref No. J-5) for tracking.
- 4) Confirm that the RF waveform on oscilloscope at both entrance and exit sides is flat. (See Fig. 8-3.)
Perform the adjustment described below if not flat.

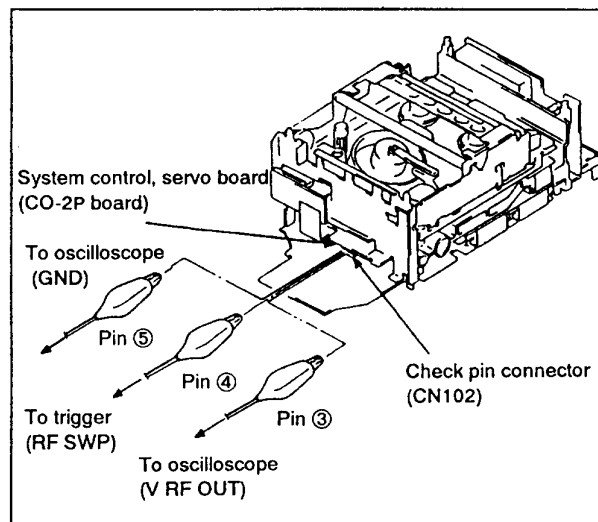


Fig. 8-2.

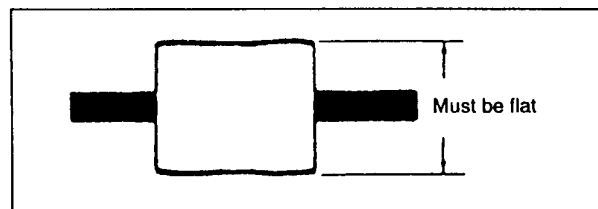


Fig. 8-3.

SECTION 9

VIDEO BLOCK ADJUSTMENTS

During the adjustments, see the adjustment element location to the adjustment from page 250.

Use the following measuring instruments for adjustment of the VTR block.

[Equipment to be used]

- 1) Monitor TV
- 2) Dual trace oscilloscope of over 10 MHz band, incorporates delay mode. (Use 10 : 1 probe unless otherwise specified)
- 3) Frequency counter
- 4) Pattern generator with video output terminal
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Regulated power supply
- 11) Alignment tapes

Tracking adjustment (WR5-1CP)*¹

Parts Code: 8-967-995-07

Video frequency characteristics adjustment (WR5-6C)*²

Parts Code: 8-967-995-17

Operation check (WR5-4CL)*³

Parts Code: 8-967-995-56

(WR5-5CSP)*⁴

Parts Code: 8-967-995-47

Note:

*1 WR5-1C (8-967-995-06) is also available.

*2 WR5-2C (8-967-995-16) is also available.

*3 WR5-3CL (8-967-995-36) is also available.

*4 WR5-3CSP (8-967-995-27) and

WR5-4CSP (8-967-995-46) are also available.

- 12) Adjustment remote controller (J-6082-053-A)

[Connection of equipment]

Unless otherwise specified, adjustment is made with the measuring instrument connected as shown in the diagram below.

- Camera/video power switch.....Video position

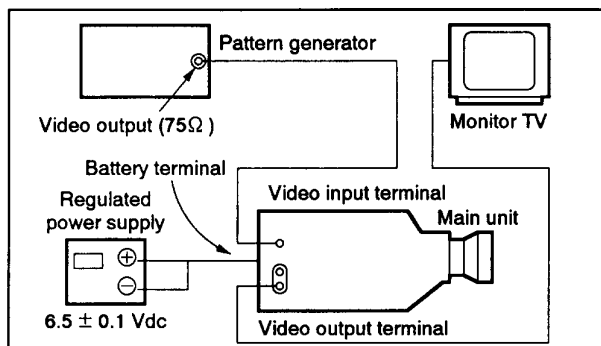


Fig. 9-1.

Note: When adjusting with the CV-9 board open, remove the following connectors:

1. CN601, CN602, CN801
2. CN802
3. CN901
4. CN902

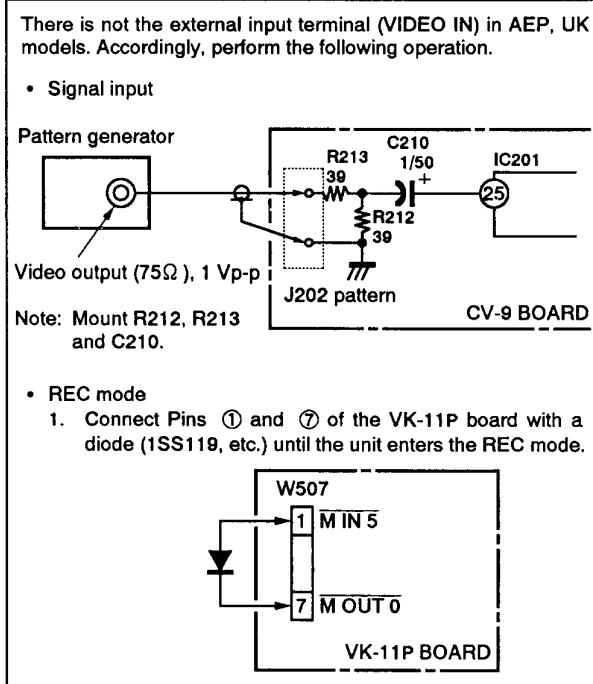


Fig. 9-2.

[Set-up during adjustment]

Since the video output signal obtained from the pattern generator is used as the adjusting signal for the VTR block, it is necessary that this video output signal be within the required specifications. Connect an oscilloscope to J202 (video input terminal) on the CV-9 board and make sure that the amplitude of the video SYNC signal is approximately 0.3V, that the video block amplitude is approximately 0.7V, that the burst signal amplitude is approximately 0.3V with flat characteristics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66. The video signal (color bars) used for VTR block electrical adjustment are shown in Fig. 9-3.

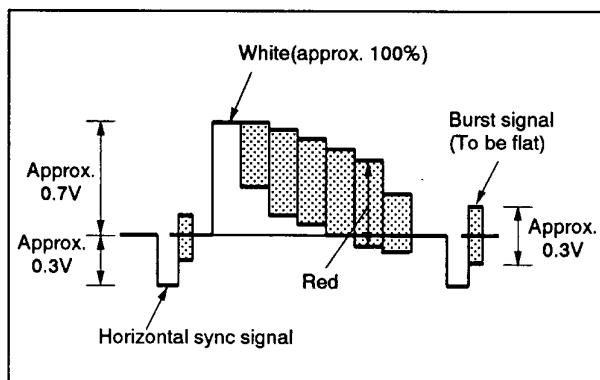


Fig. 9-3. Color bar signal of pattern generator

[Alignment tapes]

Tape	Content	Use
Tracking (WR5-1CP)	1. Recording area: PCM – video 2. Recording content: CH2:1MHz linearity adjustment signal (CH1: 9MHz)	Drum linearity adjustment
Video Frequency Response (WR5-6C)	1. Recording area: Video 2. Recording content: RF sweep 0 to 10MHz 3. Maker: 1, 3.58, 5.5 and 7MHz	Frequency response adjustment
Operation Check SP mode (WR5-5CSP) LP mode (WR5-4CL)	1. Recording area: Video 2. Recording content: ■ Video track • Video signals - Color bars 4 minutes - Monoscope 4 minutes (Color bars) Horizontal SYNC signal • Audio signals (AFM) 400Hz 60% modulation ■ PCM area • Audio signals (PCM) 1kHz 4 minutes 20Hz 2sec 400Hz 4sec 14kHz 2sec Color bar Iterative Monoscope Note: PCM area is not included in WR5-4CL	Operation check

E, Australian model

[I/O level and Impedance]

Video input	Pin jack
Input signal:	1 Vp-p, 75Ω unbalanced, negative sync
Video output	Pin jack
Output signal:	1 Vp-p, 75Ω unbalanced, negative sync
Audio input	Pin jack
Input level:	-7.5 dBs (0 dBs=0.775 Vrms)
Input impedance:	More than 47 kΩ
Audio output	Pin jack
Specified output:	-7.5 dBs
Output impedance:	More than 2.2 kΩ

AEP, UK model

[Output level and Impedance]

Video output	Pin jack
Output signal:	1 Vp-p, 75Ω unbalanced, negative sync
Audio output	Pin jack
Specified output:	-7.5 dBs
Output impedance:	More than 2.2 kΩ

[Service modes]

This unit is equipped with service modes for adjustment and operation checking.

There are the following two service modes and switching between them is by connection between GND and Pin (B6) of the check point array on the CV-9 board.

Service Mode	Function	Connection between GND and Pin (B6) of the check point array (CV-9 board)
Status indication mode	For video block adjustment, operation checking	Open (no connection)
EVR adjustment mode	For adjustment of camera block	Shorted

Refer to Camera Block Adjustment for details on the EVR adjustment mode.

1. Invoking service mode

- 1) Connect the adjustment remote controller to the remote terminal (J951 on RC-40P board) of the main unit.
- 2) Set the HOLD switch of the adjustment remote controller to the HOLD position (SERVICE position).

The status indication mode is invoked by the above operation. (To select the EVR adjustment mode, connection between Pin (B6) of the check point array and GND is required.)

2. Indication on adjustment remote controller LCD in status indication mode

Note: In categories 1 through 4, the same information is displayed in the EVF screen and on the monitor screen (when the data screen is ON).

- ① Minus segment flashes to indicate that the service mode has been invoked.
- ② Indicates service mode category.
- ③ Indicates battery voltage, LAST EMG, PRESET EMG, or MODE SW CODE according to current category.

3. Category selection and indication in each category

Select the desired category with the **[FF]** or **[REW]** button of the adjustment remote controller. There are four categories (1 through 4) and the indications are different for each. (Note that category 0 is the EVR adjustment mode.)

Category	Indication on LCD																
1	A/D conversion value for battery voltage (decimal indication) ¹⁾ 00 : 00 – 02 : 55																
2	LAST EMG (last emergency) ²⁾ Refer to Service Mode Error Indications.																
3	PRESENT EMG (current emergency) ³⁾ Refer to Service Mode Error Indications.																
4	MODE SW CODE (mechanism status) <table><tr><td>00 : 00</td><td>EJECT</td></tr><tr><td>00 : 01</td><td>I.A</td></tr><tr><td>00 : 02</td><td>UNLOAD</td></tr><tr><td>00 : 03</td><td>I.B</td></tr><tr><td>00 : 04</td><td>STOP (threading completed)</td></tr><tr><td>00 : 05</td><td>I.C</td></tr><tr><td>00 : 06</td><td>RP(REC, PB, FF, REW, CUE, REVIEW, PAUSE)</td></tr><tr><td>00 : AA</td><td>Mode switch error</td></tr></table>	00 : 00	EJECT	00 : 01	I.A	00 : 02	UNLOAD	00 : 03	I.B	00 : 04	STOP (threading completed)	00 : 05	I.C	00 : 06	RP(REC, PB, FF, REW, CUE, REVIEW, PAUSE)	00 : AA	Mode switch error
00 : 00	EJECT																
00 : 01	I.A																
00 : 02	UNLOAD																
00 : 03	I.B																
00 : 04	STOP (threading completed)																
00 : 05	I.C																
00 : 06	RP(REC, PB, FF, REW, CUE, REVIEW, PAUSE)																
00 : AA	Mode switch error																

- Notes:**
- 1) Indicates a value proportional to the battery voltage.
 - 2) LAST EMG indicates the error occurring last before entering service mode. Even if an error occurs in the service mode, it is not indicated.
 - 3) PRESENT EMG indicates the status when the **[FF]** or **[REW]** button of the adjustment remote controller was pressed. So, the indication does not change even if the error is eliminated.

• Service mode error indication

Error Status	PRESENT EMG Indication LAST EMG	Indication
No error	00 : 00	00 : 00
Loading motor	00 : 01	00 : 01
REEL FG error during unthreading	00 : 02	00 : 02
REEL FG error not during unthreading	00 : 03	00 : 03
Capstan error	00 : 04	00 : 04
DRUM PG error (0) when starting drum	00 : 05	00 : 05
DRUM PG error (1) when starting drum	01 : 05	00 : 14 or 00 : 0E
DRUM PG error (2) when starting drum	02 : 05	00 : 15 or 00 : 0F
No DRUM PG (0) when starting drum	00 : 06	00 : 06
No DRUM PG (1) when starting drum	01 : 06	00 : 14 or 00 : 0E
No DRUM PG (2) when starting drum	02 : 06	00 : 15 or 00 : 0F
DRUM FG error (0) when drum stationary	00 : 07	00 : 07
DRUM FG error (1) when drum stationary	01 : 07	00 : 14 or 00 : 0E
DRUM FG error (2) when drum stationary	02 : 07	00 : 15 or 00 : 0F
No DRUM PG (0) when drum stationary	00 : 08	00 : 08
No DRUM PG (1) when drum stationary	01 : 08	00 : 14 or 00 : 0E
No DRUM PG (2) when drum stationary	02 : 08	00 : 15 or 00 : 0F
Phase error (0) when drum stationary	00 : 09	00 : 09

- (1) During tape threading
(2) During tape unthreading
(0) Other

4. Releasing service mode

The service mode is released by returning the HOLD switch of the adjustment remote controller to the NORMAL position or by disconnecting the adjustment remote controller from the remote terminal.

[Test modes]

This unit has three test modes which are invoked by connecting the terminals of CN508 on the VK-11P board.

Test Mode	Connection of CN508 on VK-11P Board	Function
1	Pin ③ (TEST A) and Pin ② (GND) short-circuited	1. Switching position adjustment possible. 2. Error detection disabled.
2	Pin ① (TEST B) and Pin ② (GND) short-circuited	1. For battery end detection adjustment BATTERY SENSE voltage (input voltage to Pin ④ of IC501) is displayed in EVF and monitor screen (only when data screen is ON). — 1 : 03 : 05 — ↑ ↑ Mode BATTERY indication SENSE voltage
3	Pin ③ (TEST A) and Pin ② (GND)/Pin ① (TEST B) and Pin ② short-circuited.	1. For tape path adjustment (Tracking shifted by 1/4 track) Refer to MECHANISM ADJUSTMENTS.

9-1. POWER SUPPLY ADJUSTMENTS AND CHECKS

9-1-1. Oscillation Frequency Adjustment (PS-263P Board)

Mode	Stop (POWER ON)
Measurement Point	Collector of Q941
Measuring Instrument	Frequency counter
Adjustment Element	RV938
Specified Value	475 ± 5 kHz

Adjustment method:

- 1) Adjust the oscillation frequency to 475 ± 5 kHz with RV938.

9-1-2. Video 5V Adjustment (PS-263P Board)

Mode	Stop (POWER ON)
Measurement Point	Pin ① of W901
Measuring Instrument	Digital voltmeter
Adjustment Element	RV936
Specified Value	5.0 ± 0.05 Vdc

Adjustment method:

- 1) Adjust with RV936 so that it becomes 5.0 ± 0.05 Vdc.

9-2. SYSTEM CONTROL ADJUSTMENTS

9-2-1. Battery Down Adjustment (CO-2P Board)

Mode	Camera recording
Signal	Arbitrary
Measurement Point	Confirmation on monitor screen
Measuring Instrument	
Adjustment Element	RV551
Specified Value	Battery indication () flashes at a rate of 3.8 times per second (3.8 Hz) and counter value is approximately "-1 : 02 : 85".

Connections:

- 1) Connect a regulated power supply and digital voltmeter as shown in Fig. 9-4.
- 2) Connect Pin ① (TEST B) and Pin ② (GND) of CN508 on the VK-11P board with a jumper wire. (Test 2 mode)

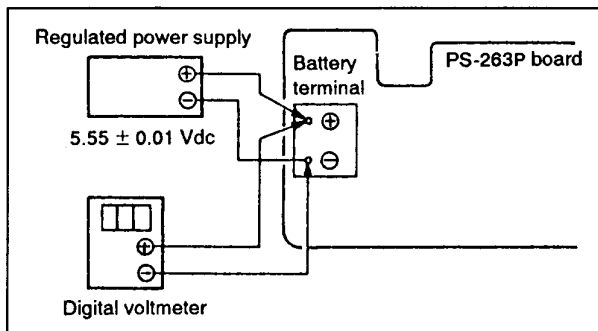


Fig. 9-4.

Adjustment method:

- 1) Press the data screen button (S509) on the VK-11P board to display the counter on the monitor screen. (See Fig. 9-5.)
- 2) Confirm that the indication on the digital voltmeter is 5.55 ± 0.01 Vdc.
- 3) Slowly rotate RV551 and set to the closest point at which the battery indication () on the monitor screen flashes at a rate of 3.2 times per seconds (3.2 Hz) and the counter value is "-1 : 02 : 85".

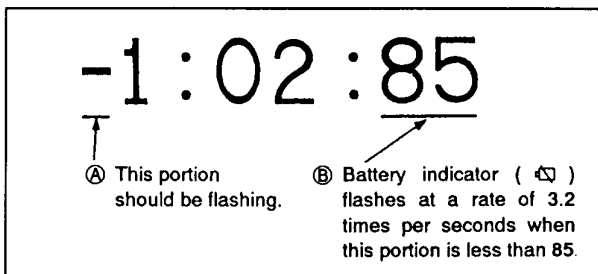


Fig. 9-5.

Checking method:

Perform the following checks and repeat the adjustments again if the required conditions are not satisfied.

- 1) Adjust the output voltage of the regulated power supply so that the indication of the digital voltmeter becomes 6.30 ± 0.01 Vdc.
- 2) Set the unit to the camera REC mode after turning the power off and then on.
- 3) Press the data screen button on the VK-11P board so that there is data indication on the monitor screen.
- 4) Slowly lower the output voltage of the regulated power supply until the indication on the digital voltmeter becomes 5.60 ± 0.01 Vdc.
- 5) Confirm that the battery indicator () on the monitor screen is out or flashing at a rate of 0.8 times per second.
- 6) Slowly lower the output voltage of the regulated power supply until the indication on the digital voltmeter becomes 5.50 ± 0.01 Vdc.
- 7) Confirm that the battery indicator () is flashing on the monitor screen at a rate of 3.2 times per second (3.2 Hz).

9-2-2. System Clock Adjustment (CK-43P Board)

Mode	Power ON
Measurement Point	Pin ⑩ of IC651
Measuring Instrument	Frequency counter
Adjustment Element	RV651
Specified Value	330 ± 5 kHz

Adjustment method:

- 1) Adjust with RV651 so that it becomes 330 ± 5 kHz.

9-2-3. Clock Precision Adjustment (CK-43P Board)

Mode	Power OFF
Measurement Point	Pin ④ of IC651
Measuring Instrument	Frequency Counter
Adjustment Element	CV651
Specified Value	8192.00 ± 0.04 Hz

Adjustment method:

- 1) Disconnect the main power supply and lithium battery.
- 2) Connect Pin ② (TEST) of IC651 to ground using a jumper wire (TEST mode).
- 3) Supply 3V (3.0 ± 0.05 Vdc) of power to the lithium battery terminals from a regulated power supply.
- 4) Adjust to 8192.00 ± 0.04 Hz using CV651.
- 5) Disconnect the regulated power supply and the jumper wire.

9-3. SERVO SYSTEM ADJUSTMENTS

9-3-1. Oscillation Frequency Adjustment (CO-2P Board)

Mode	Recording (SP mode)
Signal	Color bar
Measurement Point	Pin ⑩ of IC621
Measuring Instrument	Frequency counter
Adjustment Element	RV621
Specified Value	480 ± 5 kHz

Adjustment method:

- 1) Set the oscillation frequency to 480 ± 5 kHz using RV621.

9-3-2. REC ATF Level Checking (CO-2P Board)

Mode	Recording
Signal	No signal
Measurement Point	Emitter of Q530
Measuring Instrument	Oscilloscope
Specified Value	Approx. 900 mVp-p

Checking method:

- 1) Confirm that the REC ATF signal level is approximately 900 mVp-p.

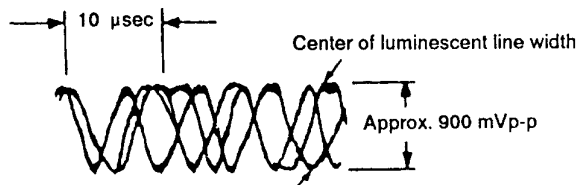


Fig. 9-6. REC ATF level checking

9-3-3. Switching Position Adjustment (CO-2P Board)

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP)
Measurement Point	CH-1: J201 (video output) on CV-9 board CH-2: Pin ④ (RF SWP) of CN102
Measuring Instrument	Oscilloscope
Adjustment Element	RV501
Specified Value	6.5 ± 0.3 H (410 ± 20 μs)

Connections:

- 1) Connect Pin ③ (TEST A) and Pin ② (GND) of CN508 on the VK-11P board using a jumper wire. (Test 1 mode)

Adjustment method:

- 1) Adjust with RV501 so that it becomes 6.5 ± 0.3 H (410 ± 20 μs).

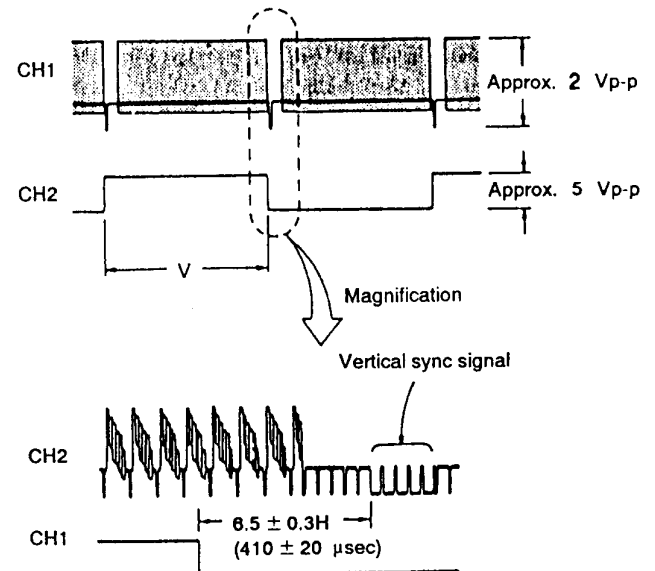


Fig. 9-7. Switching position adjustment

9-3-4. Still Adjustment (CV-9 Board)

Mode	Playback pause (LP)
Signal	Self-recorded tape of color bars signal
Measurement Point	Monitor TV screen
Measuring Instrument	
Adjustment Element	RV552
Specified Value	Equal top and bottom noise bands

Note: Use the midsection of a tape (1/4 to 3/4) for adjustment.

Adjustment method:

- 1) Play back the self-recorded tape and press the PAUSE button to set the playback pause mode after the image has stabilized.
- 2) Confirm that the noise bands on top and bottom of the screen are equal.
- 3) If the specified condition is not satisfied, adjust RV552, and repeat 1) and 2).

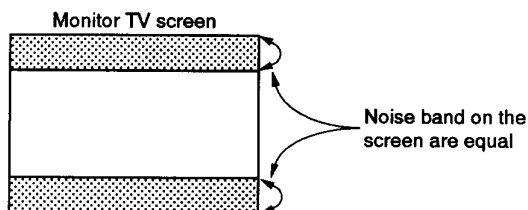


Fig. 9-8. Still adjustment

9-3-5. Capstan FG Adjustment (CO-2P Board) (E, Australian Model only)

Mode	Recording (LP mode)
Signal	Arbitrary
Measurement Point	Pin ① of IC510
Measuring Instrument	Oscilloscope
Adjustment Element	RV502
Specified Value	Minimum amplitude

Adjusting method:

- 1) Adjust amplitude of the output waveform (capstan error) at Pin ① of IC510 to the minimum with RV502.

Fig. 9-9.

9-4. VIDEO BLOCK ADJUSTMENT

The adjustment of the video system should in principle follow the adjustment procedure outlined below.

The color video signal supplied from the pattern generator is utilized as the video input signal for video system adjustment in the recording mode. Make sure that the sync signal and color burst signal match the specifications given in set-up for adjustment, as shown in Fig. 9-3.

[Adjustment procedure]

- 1) Playback frequency characteristics adjustment
- 2) Flying erase check
- 3) Crystal oscillator f_0 adjustment
- 4) Y/C separation adjustment
- 5) IR2 adjustment
- 6) SYNC AGC adjustment
- 7) Emphasis input level adjustment
- 8) PB Y level adjustment
- 9) PB video out level adjustment
- 10) Y FM carrier frequency adjustment
- 11) Y FM deviation adjustment
- 12) Chroma emphasis f_0 adjustment
- 13) REC Y level adjustment
- 14) REC C level adjustment
- 15) Feedback chroma adjustment
- 16) Quasi burst phase adjustment
- 17) Delay burst phase adjustment
- 18) DDS character position adjustment
- 19) Character generator f_0 adjustment

9-4-1. Playback Frequency Characteristics Adjustment (CO-2P Board)

1. CH1, CH2 adjustment

The adjusting element for CH2 is shown in parentheses [].

Mode	Playback
Signal	Alignment tape: For frequency characteristics adjustment (WR5-6C)
Measurement Point	Pin ③ of CN102 External trigger: Pin ④ of CN102 Trigger slope: +, [-]
Measuring Instrument	Oscilloscope
Adjustment Element	RV101 [RV102]
Specified Value	3.58 MHz level : 5.5 MHz level=4 : 3

Adjustment method:

- 1) Adjust RV101 [RV102] so that the ratio of the 3.58 MHz level to the 5.5 MHz level is 4 : 3 [4 : 3].

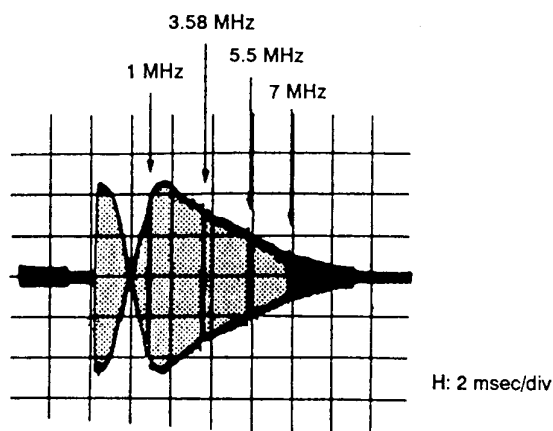


Fig. 9-10. Playback frequency characteristics adjustment

9-4-2. Flying Erase Check (CO-2P Board)

Mode	Recording
Signal	Arbitrary
Measurement Point	Pin ⑩ of CN101 (TP103: FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: 7.95 ± 5.5 MHz Voltage: 7.75 ± 0.75 Vp-p

Note: Be sure to use MP type tape. (Pin ⑩ of CN501 should be "L".)

Checking method:

- 1) Confirm that the oscillation frequency is 7.95 ± 5.5 MHz and the oscillation voltage is 7.75 ± 0.75 Vp-p.



Fig. 9-11.

9-4-3. Crystal Oscillator fo Checking (CV-9 Board)

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP)
Measurement Point	Pin ⑩ of W202 (fsc IN)
Measuring Instrument	Frequency counter
Specified Value	$4433619 +_{-60}^{50}$ Hz

Checking method:

- 1) Confirm that the oscillation frequency at Pin ⑩ of W202 is $4433619 +_{-60}^{50}$ Hz.

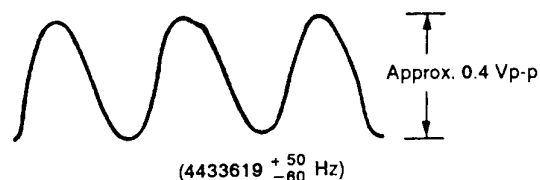


Fig. 9-12. Crystal oscillator fo adjustment

9-4-4. Y/C Separation Adjustment (CV-9 Board)

Mode	Recording
Signal	Color bars
Measurement Point	Any terminal of RV204 (DEV) (Pin ② of IC203)
Measuring Instrument	Oscilloscope
Adjustment Element	RV202
Specified Value	Minimum residual chroma component

Connections:

- 1) Connect Pin ③ of IC203 (Pin ④ of IC202) to GND with a $10\ \mu\text{F}/16\text{V}$ electrolytic capacitor. (Capacitor negative side to GND)

Adjustment method:

- 1) Set the residual chroma component to minimum with RV202.

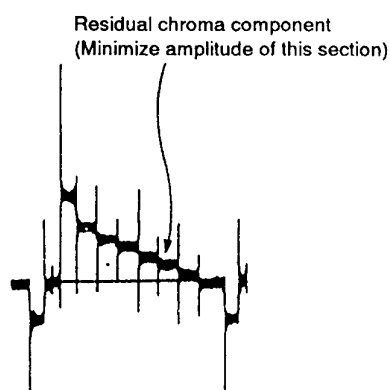


Fig. 9-13. Y/C separation adjustment

9-4-5. IR2 Adjustment (CV-9 Board)

Mode	Recording
Signal	Color bars
Measurement Point	Pin ⑧ of IC203
Measuring Instrument	Oscilloscope
Adjustment Element	RV203
Specified Value	$6.9 \pm 0.2\ \mu\text{sec}$

Connections:

- 1) Connect Pin ⑧ of IC 203 to GND with a $3.9\ \text{k}\Omega$ resistor.

Adjustment method:

- 1) Adjust RV203 so that it becomes $6.9 \pm 0.2\ \mu\text{sec}$.

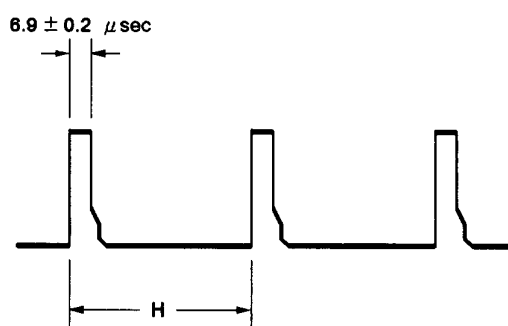


Fig. 9-14. IR2 adjustment

9-4-6. SYNC AGC Adjustment (CV-9 Board)

Mode	Recording
Signal	Color bar
Measurement Point	J201 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjustment Element	RV201
Specified Value	$1.00 \pm 0.05\ \text{Vp-p}$

Note: Terminate VIDEO OUT (J201) at $75\ \Omega$.

Adjustment method:

- 1) Adjust with RV201 so that it becomes $1.00 \pm 0.05\ \text{Vp-p}$.

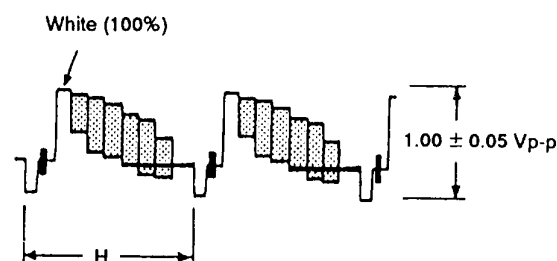


Fig. 9-15. SYNC AGC adjustment

9-4-7. Emphasis Input Level Adjustment (CV-9 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Pin ④ of IC203
Measuring Instrument	Oscilloscope
Adjustment Element	RV401
Specified Value	0.50 ± 0.02 Vp-p

Adjustment method:

- 1) Adjust with RV401 so that it becomes 0.50 ± 0.02 Vp-p.

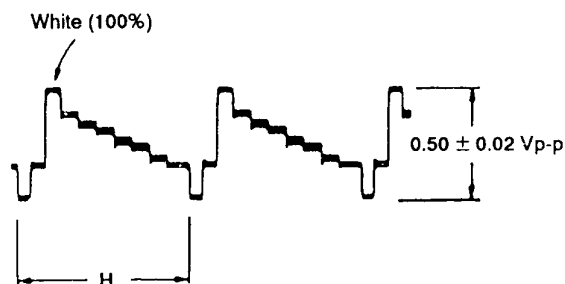


Fig. 9-16. Emphasis input level adjustment

9-4-8. PB Y Level Adjustment (CV-9 Board)

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP) Color bar section
Measurement Point	Pin ④ of IC203
Measuring Instrument	Oscilloscope
Adjustment Element	RV402
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method:

- 1) Adjust to 0.50 ± 0.02 Vp-p with RV402.
- 2) Always perform "PB video out level adjustment" after this adjustment.

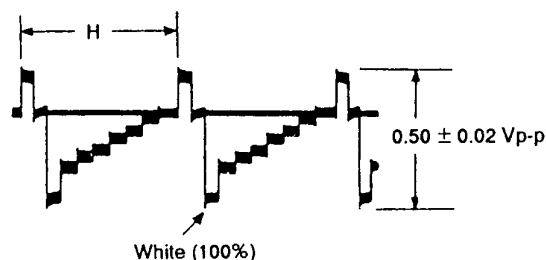


Fig. 8-17. PB Y level adjustment

9-4-9. PB Video Out Level Adjustment (CV-9 Board)

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP) Color bar section
Measurement Point	J201 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjustment Element	RV403
Specified Value	1.00 ± 0.04 Vp-p

Note: Terminate VIDEO OUT (J201) at 75Ω .

Adjustment method:

- 1) Adjust with RV403 so that it becomes 1.00 ± 0.04 Vp-p.

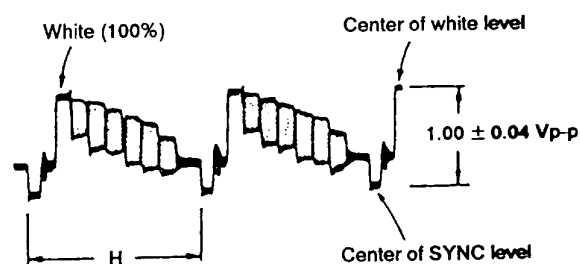


Fig. 9-18. PB video out level adjustment

9-4-10. Y FM Carrier Frequency Adjustment (CV-9 Board)

Mode	Recording
Signal	No signal
Measurement Point	Emitter of Q232 or center terminal of RV205 (REC Y)
Measuring Instrument	Frequency counter
Adjustment Element	RV205
Specified Value	4.39 ± 0.02 MHz

Adjustment method:

- 1) Adjust to 4.39 ± 0.02 MHz with RV205.
- 2) Perform "Deviation Adjustment".

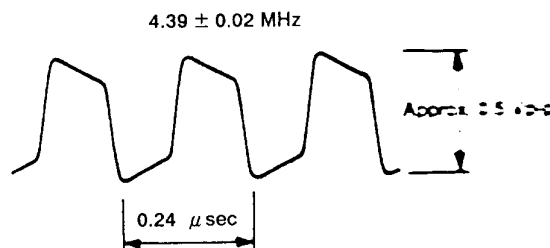


Fig. 9-19. Y FM carrier frequency adjustment

9-4-11. Y FM Deviation Adjustment (CV-9 Board)

Mode	Recording and playback
Signal	Color bar
Measurement Point	J201 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjustment Element	RV204
Specified Value	Playback level is 1.00 ± 0.04 Vp-p

Notes: 1) Confirm that "PB Y Level Adjustment", "PB Video Out Level Adjustment" and "Y FM Carrier Frequency Adjustment" have been completed.
2) Terminate VIDEO OUT (J201) at 75Ω .

Adjustment method:

- 1) Record the color bar signal.
- 2) Playback the recorded signal.
- 3) Confirm the playback output.
Specified value: 1.00 ± 0.04 Vp-p
- 4) If the specified value is not satisfied, repeat 1) to 3) after turning RV204 in the following manner.

	Rotation direction of RV204
When smaller than specified value	Clockwise (○)
When larger than specified value	Counterclockwise (○)

Table 9-1.

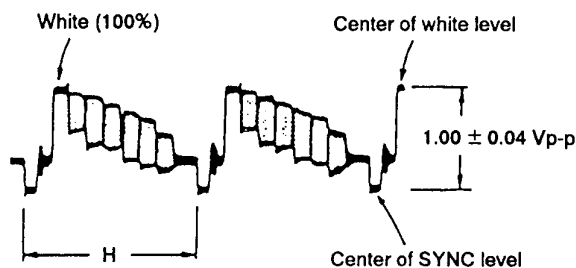


Fig. 9-20. Y FM deviation adjustment

9-4-12. Chroma Emphasis fo Adjustment (CV-9 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Center terminal of RV208 (REC C)
Measuring Instrument	Oscilloscope
Adjustment Element	FL202
Specified Value	Minimum f0 component

Adjustment method:

- 1) Adjust with FL202 so that amplitude of the flat section of the chroma signal RED section becomes minimum.

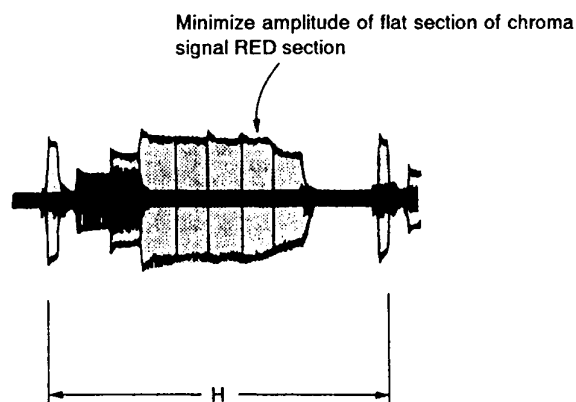


Fig. 9-21. Chroma emphasis fo adjustment

9-4-13. REC Y Level Adjustment (CV-9 Board)

Mode	Recording
Signal	No signal
Measurement Point	Emitter of Q230 (Pin ⑩ of CN502)
Measuring Instrument	Oscilloscope
Adjustment Element	RV207
Specified Value	230 ± 10 mVp-p

Adjustment method:

- 1) Adjust with RV207 so that it becomes 230 ± 10 mVp-p.

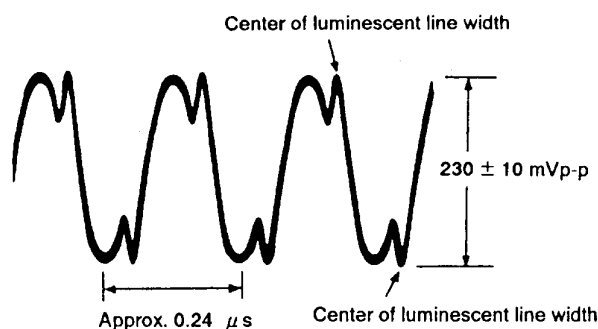


Fig. 9-22. REC Y level Adjustment

9-4-14. REC C Level Adjustment (CV-9 Board)

Mode	Recording
Signal	Color bar
Measurement Point	Emitter of Q233 (Pin ⑩ of CN502)
Measuring Instrument	Oscilloscope
Adjustment Element	RV208
Specified Value	110 ± 10 mVp-p

Adjustment method:

- 1) Adjust with RV208 so that it becomes 110 ± 5 mVp-p.



Fig. 9-23. REC C level adjustment

9-4-15. Feedback Chroma Adjustment (PJ-20 Board)

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP)
Measurement Point	Emitter of Q107
Measuring Instrument	Oscilloscope
Adjustment Element	RV104
Specified Value	Minimum residual chroma

Adjusting method:

- 1) Adjust RV104 so as to minimize the residual chroma component.

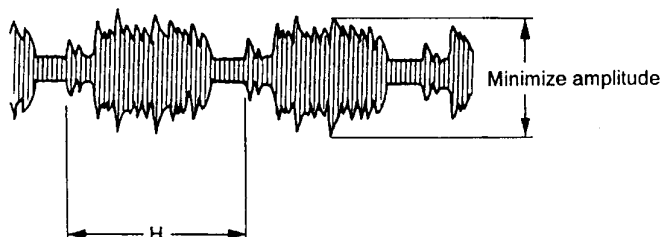


Fig. 9-24.

9-4-16. Quasi Burst Phase Adjustment (PJ-20 Board)

1. Method using vectorscope

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP)
Measurement Point	VIDEO OUT terminal
Measuring Instrument	Vectorscope
Adjusting Element	RV102
Specified Value	Phase of color luminance points in quasi burst mode is same as phase of color luminance points in through burst mode

Adjusting method:

- 1) Memorize of the phase of the color luminance points (especially yellow). (Through burst mode)
- 2) Connect Pin ② of IC101 and Pin ② of CN202 with a diode (1SS119, etc.). (Quasi burst mode)



Fig. 9-25.

- 3) Confirm the color of color bars on the monitor screen. If abnormal, stop the unit and then set the playback mode again.
- 4) Adjust RV102 so that the phase of the color luminance points is the same as the phase memorized in 1).
- 5) Remove the diode.

2. Method using monitor TV

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP)
Measurement Point	Confirmation on monitor TV screen
Measuring Instrument	
Adjusting Element	RV102
Specified Value	Minimum chroma flickering

Connection:

- 1) Connect Pin ② of IC101 and Pin ② of CN502 on CV-9 board (RF SWP) using a diode (1SS119, etc.).

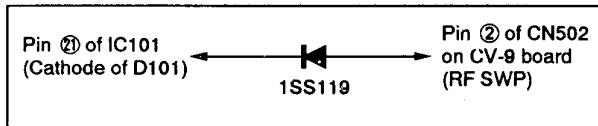


Fig. 9-26.

Adjusting method:

- 1) Observe the monitor screen. If color is abnormal and considerable chroma flicker occurs, stop the unit and then set the playback mode again.
- 2) Set the monitor color level to maximum and its bright level to minimum.
- 3) Minimize chroma flicker with RV102 so that horizontal black stripes cannot longer be seen.
- 4) Remove the diode.

9-4-17. Delay Burst Phase Adjustment (PJ-20 Board)

Mode	Playback pause (LP mode)
Signal	Alignment tape: For operation checking (WR5-4CL) color bars
Measurement Point	Confirmation on monitor TV screen
Measuring Instrument	
Adjusting Element	RV103
Specified Value	Minimum chroma flickering

Adjusting method:

- 1) Set the monitor color level to maximum and its bright level to minimum.
- 2) Rotate RV103 fully in the counterclockwise direction(○).
- 3) Turn RV103 slowly clockwise and stop where chroma flicker is minimum and horizontal black stripes are least visible.

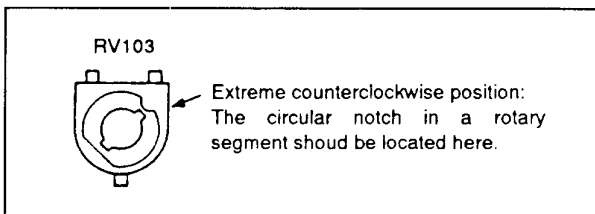


Fig. 9-27.

9-4-18. DDS Character Position Adjustment (CV-9 Board)

Mode	Playback
Signal	Alignment tape: For operation checking (WR5-5CSP) Color bar section
Measurement Point	Confirm on monitor TV screen
Measuring Instrument	
Adjustment Element	CV501
Specified Value	See Fig. 9-28.

Adjustment method:

- 1) Press the data screen button for indication of the counter on the monitor TV screen.
- 2) Adjust CV501 until the right inner contour of the number at the right side of the count indication is lined up with the border line between the blue and black color bars.

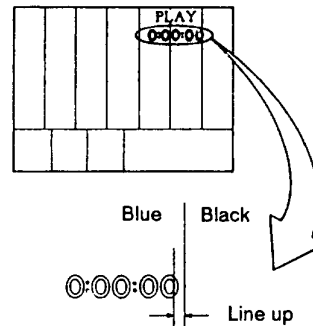


Fig. 9-28.

9-4-19. Character Generator f_0 Adjustment (CV-9 Board)

Mode	E-E
Signal	Non-signal
Measurement Point	Pin ⑩ of IC501
Measuring Instrument	Frequency counter
Adjustment Element	CV502
Specified Value	15625 ± 100 Hz

Adjustment method:

- 1) Adjust CV502 so that it becomes 15625 ± 100 Hz.

9-5. AUDIO SYSTEM ADJUSTMENT

- Perform adjustment with the color bar signal used as the video input signal.

[Connection of audio measuring instruments]

In addition to the video system measuring instruments, connect the audio system measuring instruments as shown in the figure below, and set the power switch to the video position for adjustment.

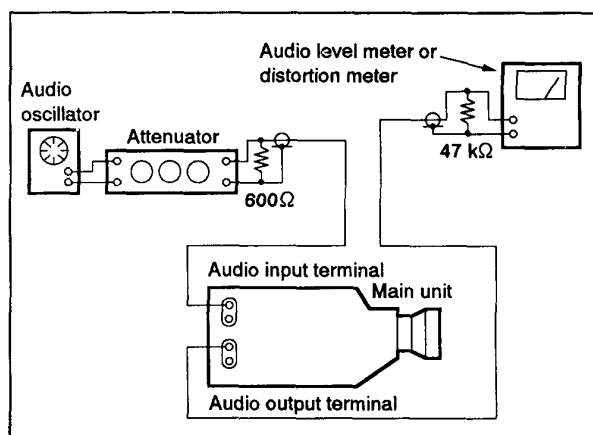


Fig. 9-29.

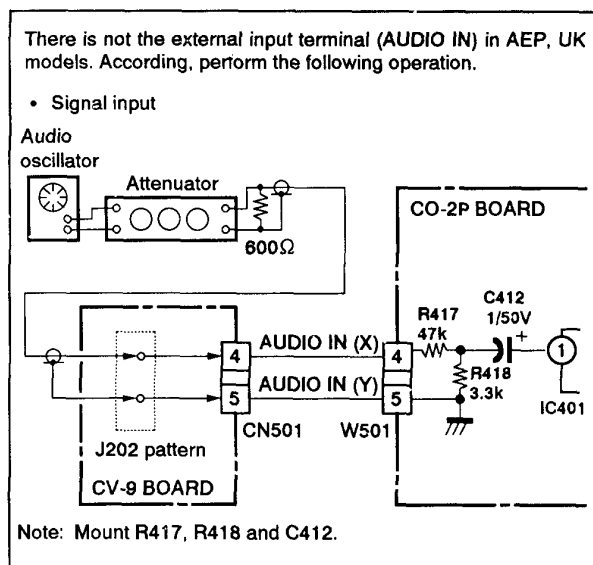


Fig. 9-30.

9-5-1. AFM Carrier Frequency Check (CO-2P Board)

Mode	Recording
Signal	Non-signal
Measurement Point	Pin ② of IC401 (REC AFM)
Measuring Instrument	Frequency counter
Specified Value	1.50 ± 0.05 MHz

Note: Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) having high impedance and low capacitance.

Checking method:

- Turn OFF the audio oscillator output.
- Confirm that the AFM carrier frequency is 1.50 ± 0.05 MHz.

9-5-2. REC AFM Carrier Level Check (CO-2P Board)

Mode	Recording
Signal	Non-signal
Measurement Point	Pin ② of IC401 (REC AFM)
Measuring Instrument	Oscilloscope
Specified Value	160 ± 40 mVp-p

Checking method:

- Confirm that the level is 160 ± 40 mVp-p.

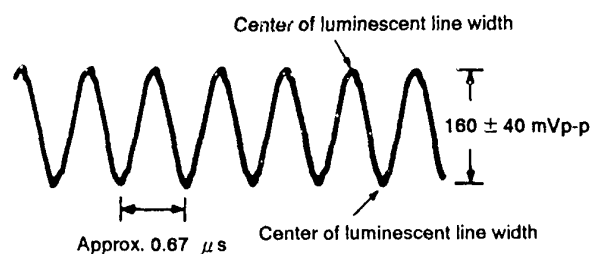


Fig. 9-31. REC AFM recording current adjustment

9-5-3. Playback Level Check

Mode	Playback
Signal	Alignment tape: Operation checking (WR5-5CSP)
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter
Specified Value	-7.5 ± 2 dBs

Checking method:

- Confirm that the audio output level is -7.5 ± 2 dBs.

9-5-4. E-E Output Level Check

Mode	E-E
Signal	400 Hz, -7.5 dBs
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter
Specified Value	-7.5 ± 2 dBs

Checking method:

- 1) Make sure that the audio output level is -7.5 ± 2 dBs.

9-5-5. Overall Level Characteristics Check

Mode	Self-recording and playback
Signal	400 Hz, -7.5 dBs
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter
Specified Value	-7.5 ± 3 dBs

Checking method:

- 1) Record the signal.
- 2) Playback the recorded section.
- 3) Make sure that the audio output level is -7.5 ± 3 dBs.

9-5-6. Overall Frequency Characteristics Check

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, -17.5 dBs Ⓑ 30 Hz, -17.5 dBs Ⓒ 14 kHz, -17.5 dBs
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter
Specified Value	With the 400 Hz playback output level as 0 dB, the playback output level of 30 Hz and 14 kHz is 0 ± 3 dB

Checking method:

- 1) Record signal Ⓐ through Ⓒ in order.
- 2) Playback the recorded sections.
- 3) With the 400 Hz playback output level as 0 dB, confirm that the playback output level of 30 Hz and 14 kHz is 0 ± 3 dB.

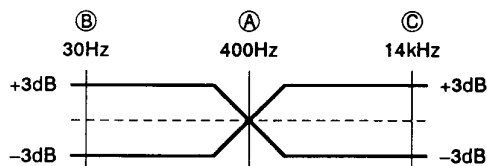


Fig. 9-32. AFM overall frequency characteristics

9-5-7. Overall Distortion Check

Mode	Self recording and playback
Signal	400 Hz, -7.5 dBs
Measurement Point	Audio output terminal
Measuring Instrument	Distortion meter
Specified Value	Less than 0.5% *1

Checking method:

- 1) Record the signal.
 - 2) Playback the recorded section.
 - 3) Confirm that the distortion is less than 0.5%. *1
- *1 Value when 200 Hz – 6 kHz BPF is used

9-5-8. Overall Noise Level Check

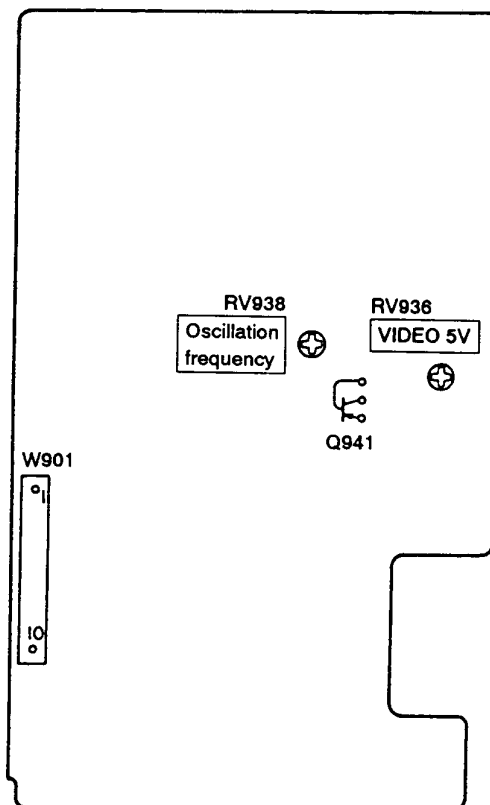
Mode	Self-recording and playback
Signal	No signal (shorting plug is inserted into audio input jack)
Measurement Point	Audio input terminal
Measuring Instrument	Audio level meter
Specified Value	Less than -67 dBs*2

Checking method:

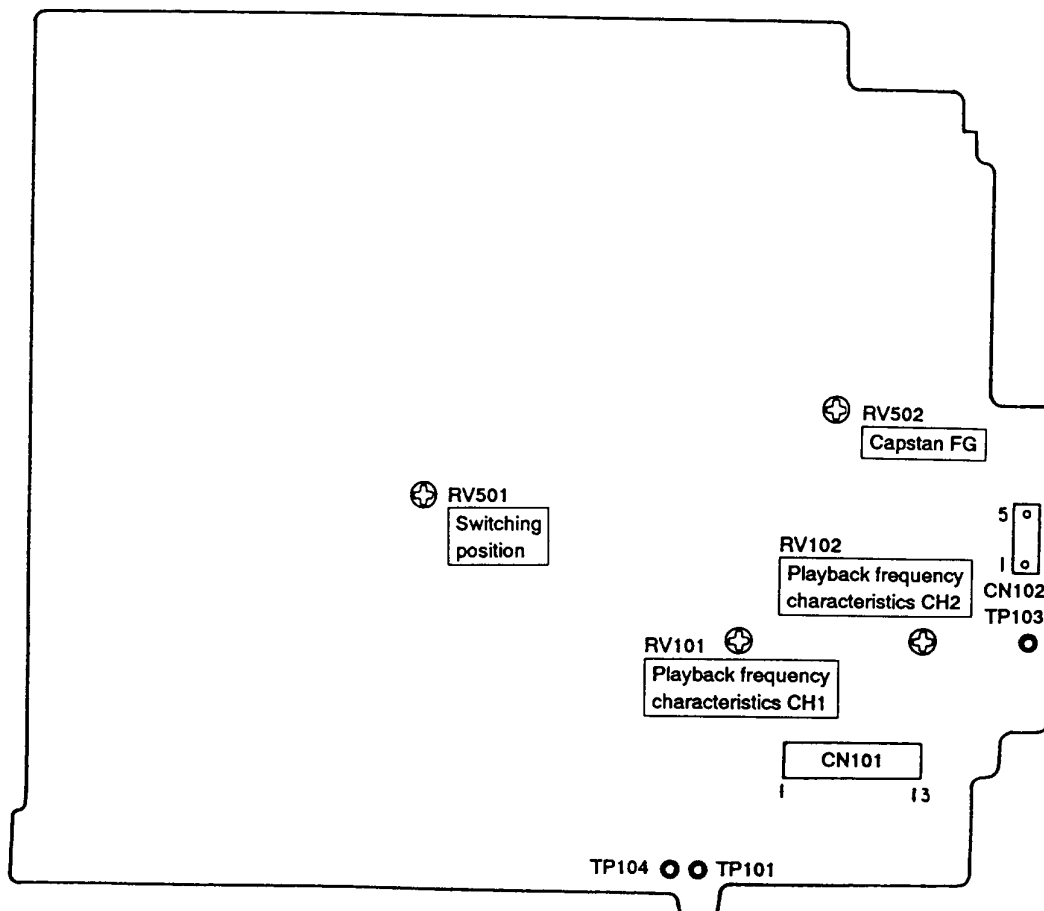
- 1) Record the signal.
 - 2) Playback the recorded section.
 - 3) Make sure that the noise level is less than -67 dBs. *2
- *2 Value when IHF-A hearing correction filter is used.

9-6. ADJUSTMENT ELEMENTS LOCATION

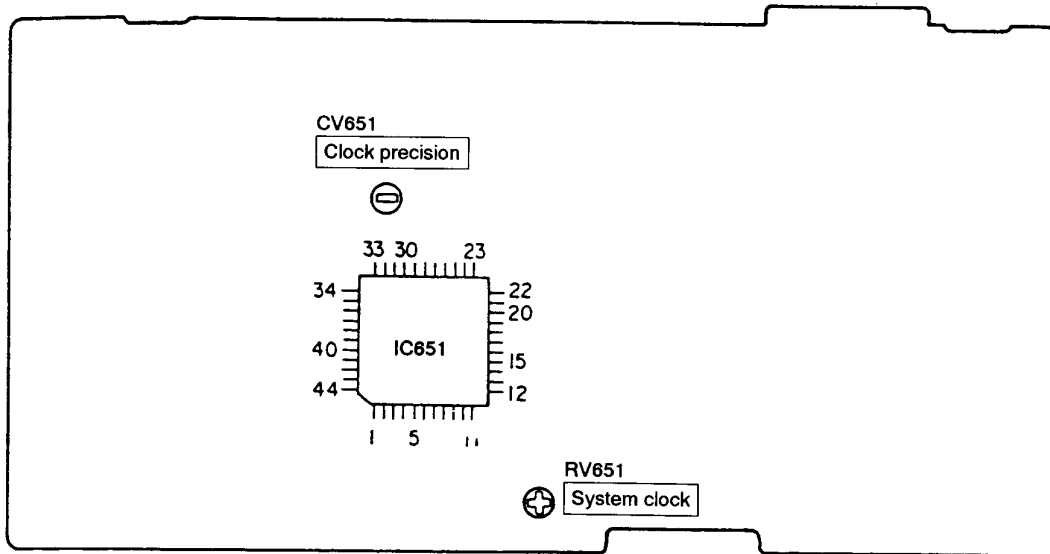
PS-263P BOARD (COMPONENT SIDE)



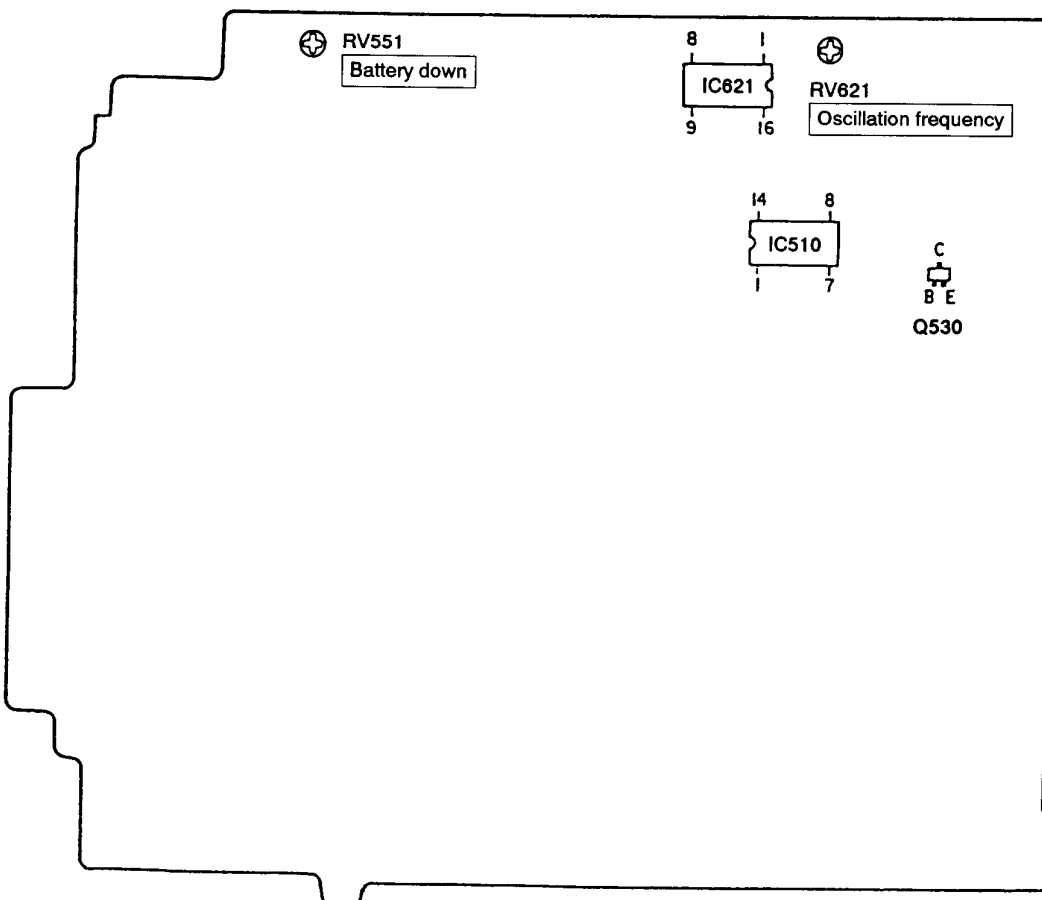
CO-2P BOARD (CONDUCTOR SIDE)



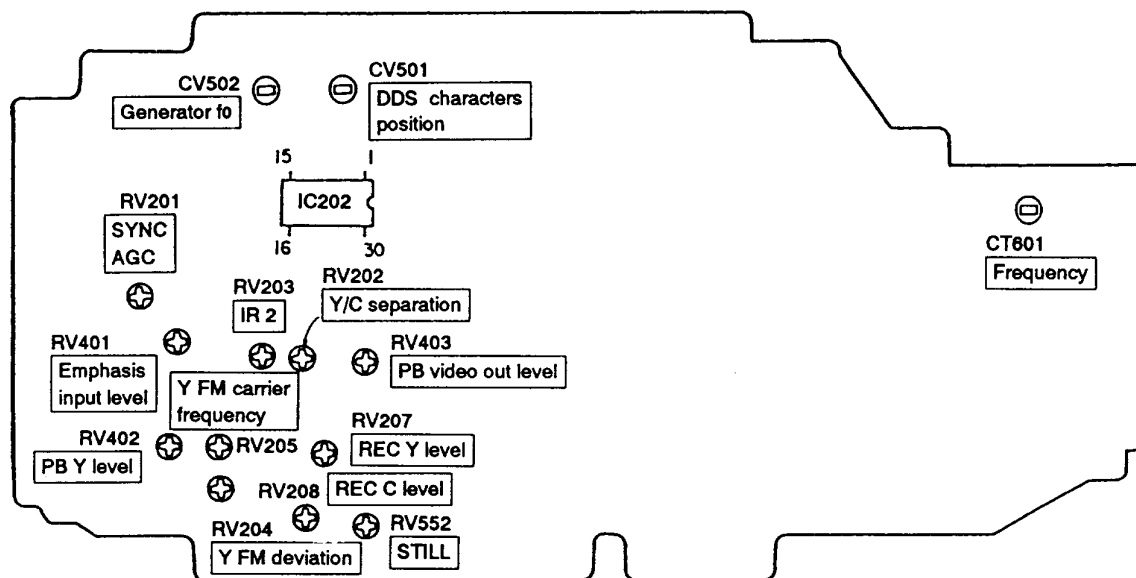
CK-43P BOARD (COMPONENT SIDE)



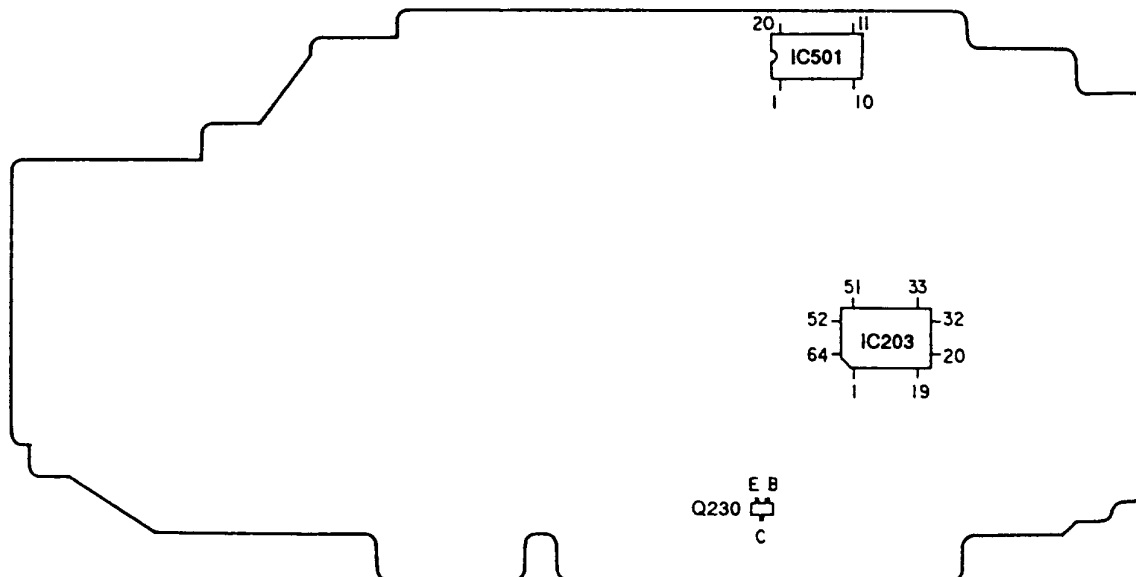
CO-2P BOARD (COMPONENT SIDE)



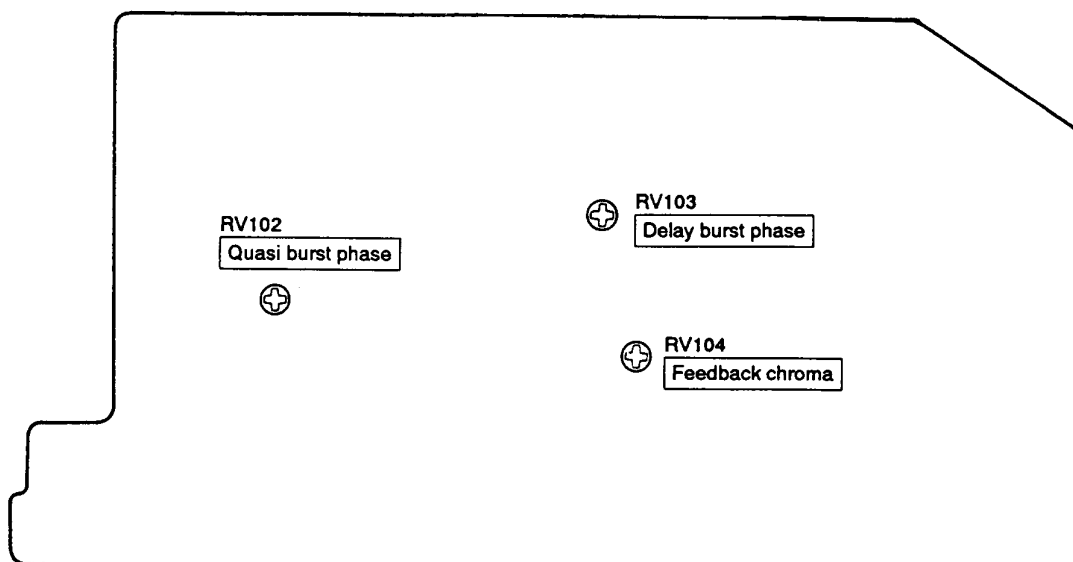
CV-9 BOARD (COMPONENT SIDE)



CV-9 BOARD (CONDUCTOR SIDE)



PJ-20 BOARD (COMPONENT SIDE)

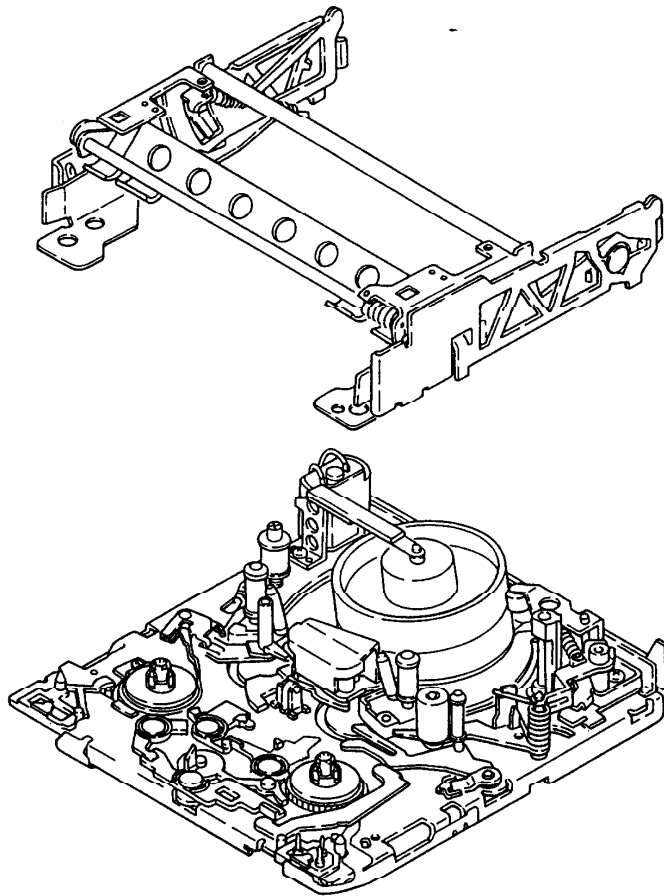


mm Video MECHANICAL ADJUSTMENT MANUAL III

U MECHANISM

Video 8

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8 MECHANISM DECK
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1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

- 1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
- 2) Cover the LED assembly with an opaque cap, etc. ①.
- 3) Attach a piece of tape to the RECOG switch ② so that the pin is held down.
- 4) Push the EJECT lever ③ in the direction of the arrow ④.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

- 1) Follow the procedures in section 1-1-1. above.
- 2) Put the rubber band ⑤ around the S and T reels.
- 3) Press the PLAY switch of unit, then push the tension regulator arm assembly ⑥ in the direction of the arrow ⑦ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
- 4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

- 1) To eject, turn the EJECT switch on.

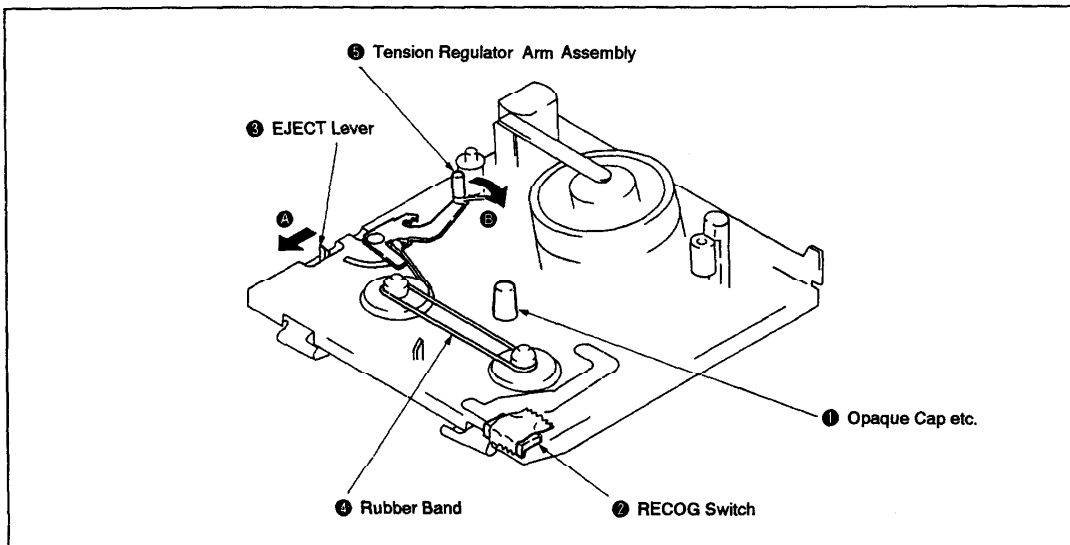


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

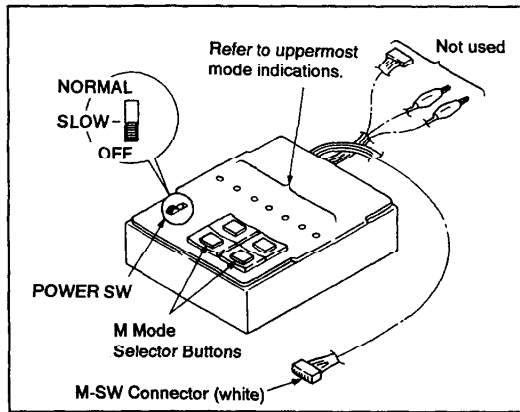


Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

- 1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ① onto the mode selector.
- 2) Attach the conversion connector (Ref. No. J-8) ③ of MODE SELECTOR III to the 6-pin connector (white) ② of the mode selector M-SW.
- 3) Remove the FP-89 flexible board ⑤ from the flexible connector ④.
- 4) Attach the FP-89 flexible board ⑤ to the flexible connector ⑥ of the MODE SELECTOR III conversion connector ③, then attach the 2-pin connector (white) ⑦ of the loading motor to the 2-pin connector (white) ⑧.

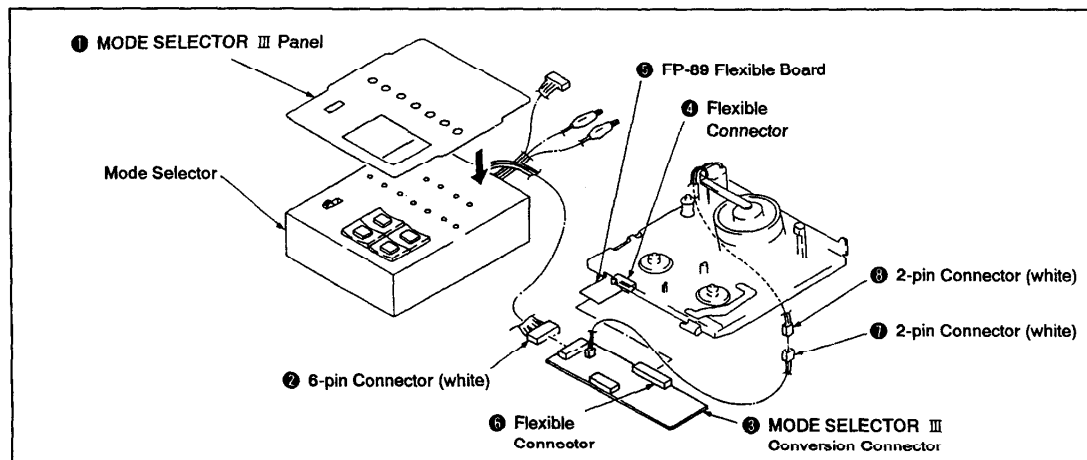


Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

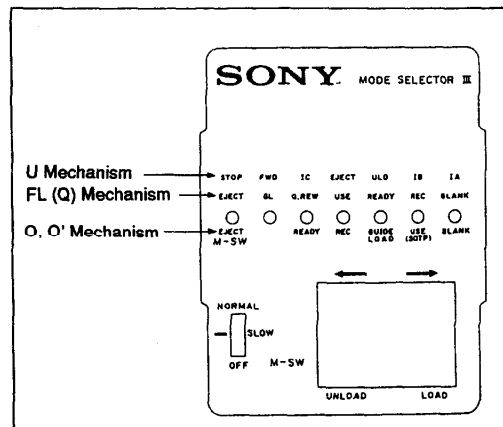


Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

- 1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.

Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

- 1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

- 1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

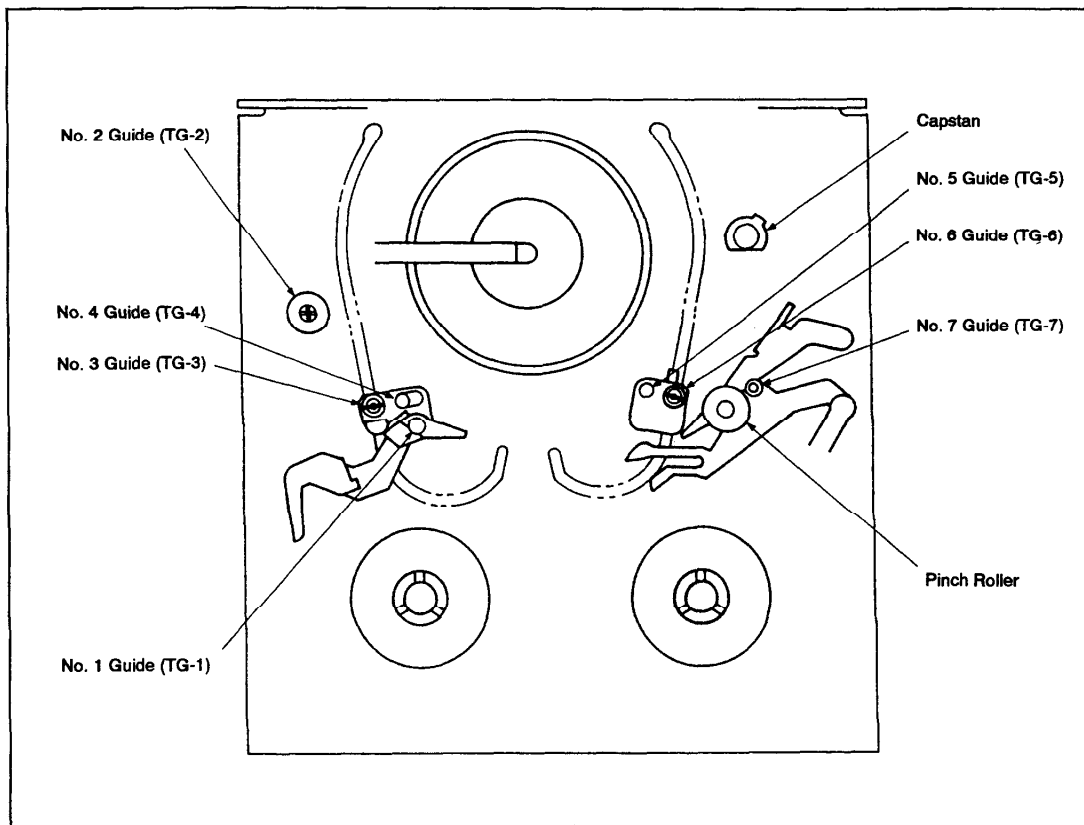


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○ Cleaning ◎ Lubrication ☆ Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demagnetizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	—	☆	—	☆	—	☆	—	☆	—	☆	3-728-866-01
	Relay belt (long)	—	☆	—	☆	—	☆	—	☆	—	☆	3-728-865-01
	Capstan shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	1-541-612-11
Performance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD, RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
Specified oil: Part No. 7-661-018-01
(Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
Grease: Part No. 7-662-010-08
(Sony grease SGL-701)

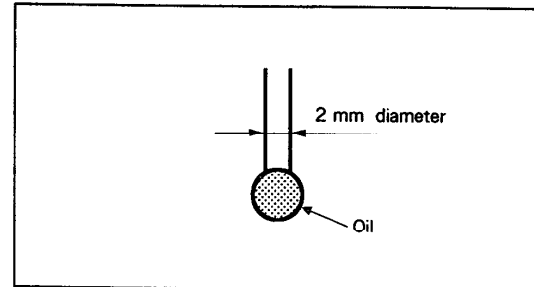
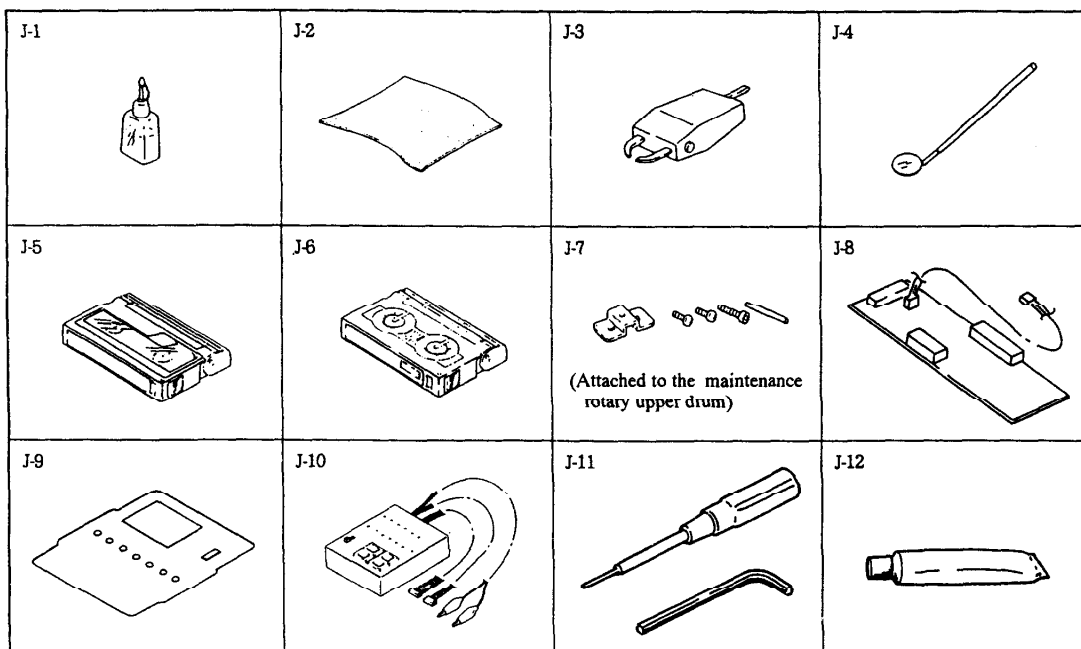


Fig. 2-2.

2-5. SERVICING TOOLS

Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	—	
J-2	Chamois cloth	2-034-697-00	—	
J-3	Head demagnetizer	Commercially available	—	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 k Ω)



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

- Notes:**
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
 - Modes within a frame are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

- 1) Remove the screw ①, then remove the HC roller assembly ②.

2. Installation (See Fig. 3-1.)

- 1) Align the two dowels ③ attached to the HC roller assembly ② with the two holes ④ in the mechanism chassis.
- 2) Secure the HC roller assembly ② with the screw ①.

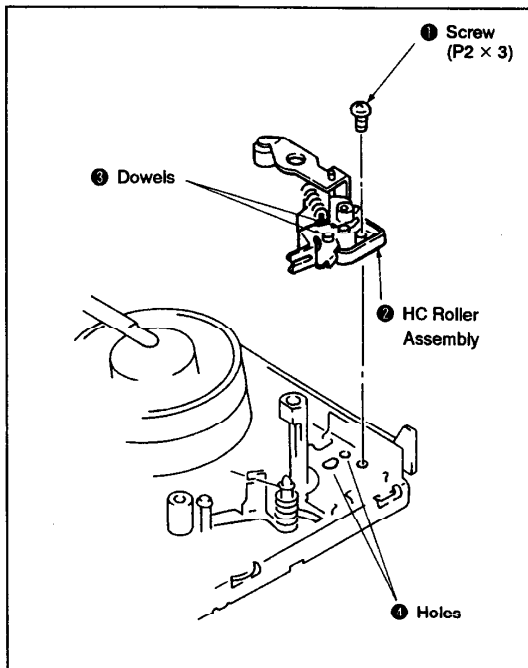


Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

- Remove the screw ①, then remove the guide guard assembly ②.

2. Installation (See Fig. 3-2.)

- 1) Align the dowel ③ attached to the guide guard assembly ② with the hole ④.
- 2) Secure the guide guard assembly ② with the screw ①.

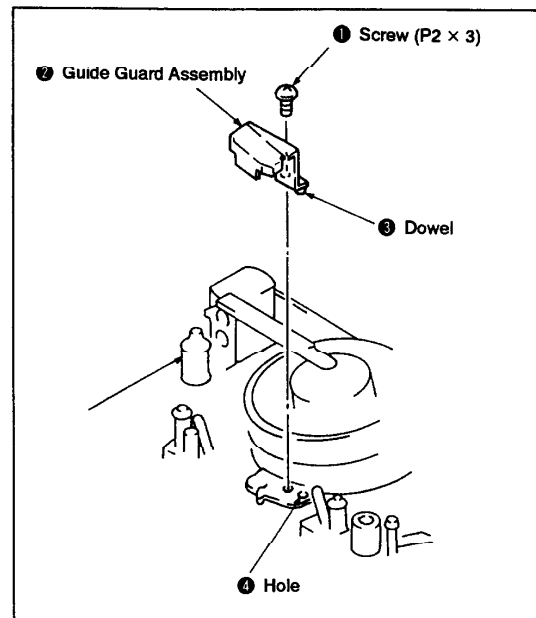


Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

- 1) Set the **ULD** mode.
- 2) Turn the stopper ① in the direction of the arrow ④ as far as it will go.
- 3) Remove the two screws ②, then remove the DC motor ③.

2. Installation (See Fig. 3-3.)

- 1) Align the two screwed dowels ④ with the two holes ⑤, then engage the toothed part ⑥ with the connecting gear ⑦.
- 2) Secure the DC motor assembly ③ with the two screws ②.
- 3) Turn the stopper ① in the direction of the arrow ⑤ as far as it will go.

Note:

- When engaging the gears, take care not to damage their teeth.
- Do not leave any clearance between the DC motor ③ and the chassis.
- Do not touch the capstan motor axle*, the oil seal* and the rotor*.

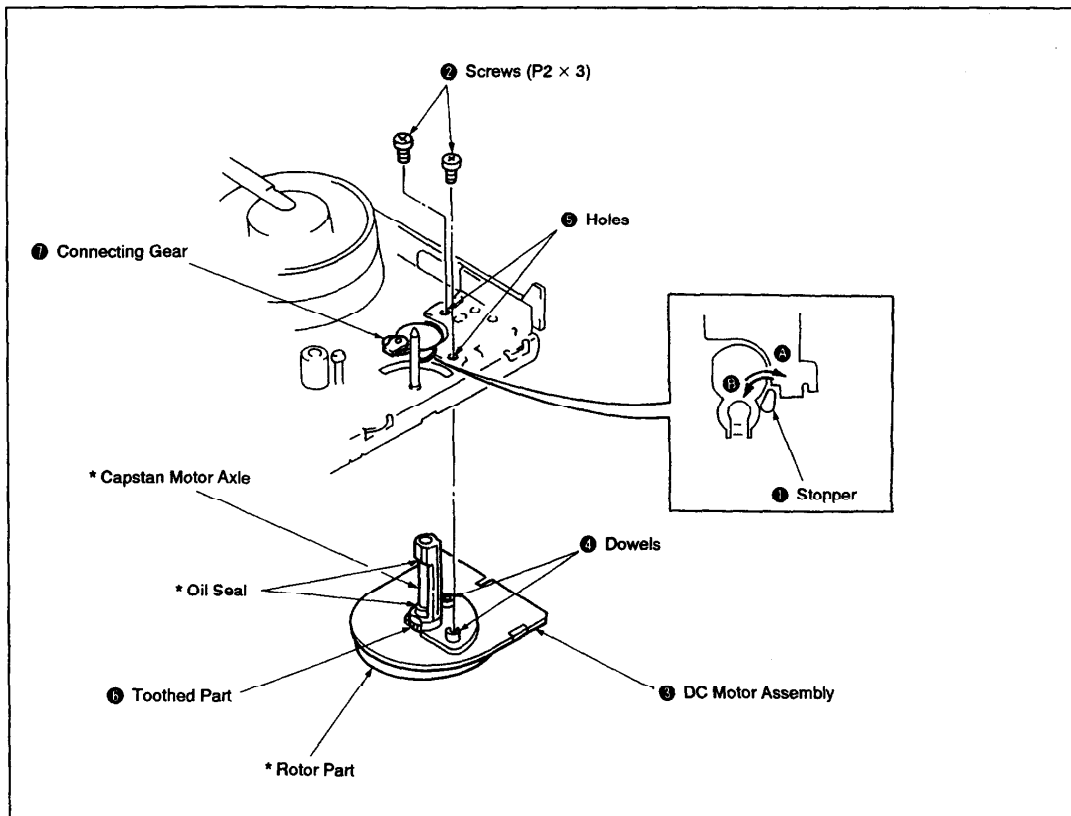


Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

- 1) Remove the torsion coil spring (ST) ①.
- 2) Remove the axle holding pin ②, then remove the T brake ③.
- 3) Remove the axle holding pin ④, then remove the S brake ⑤.

2. Installation (See Fig. 3-4.)

- 1) While fitting the toothed part ⑥ into the notch ⑦, mount the S brake ⑤.
- 2) Insert the axle holding pin ②.
- 3) Insert the axle ⑧ to the S reel side of the brake release arm ④ so that the ④ part comes closer to the drum than part ③, and mount the T brake ③.
- 4) Insert the axle holding pin ④.
- 5) Insert the torsion coil spring (ST) ① below the claw ⑩ of the axle ⑩, then hook it to two claws ⑪.

Note: Confirm that the claws of axle holding pins ② and ④ are not broken before assembling.

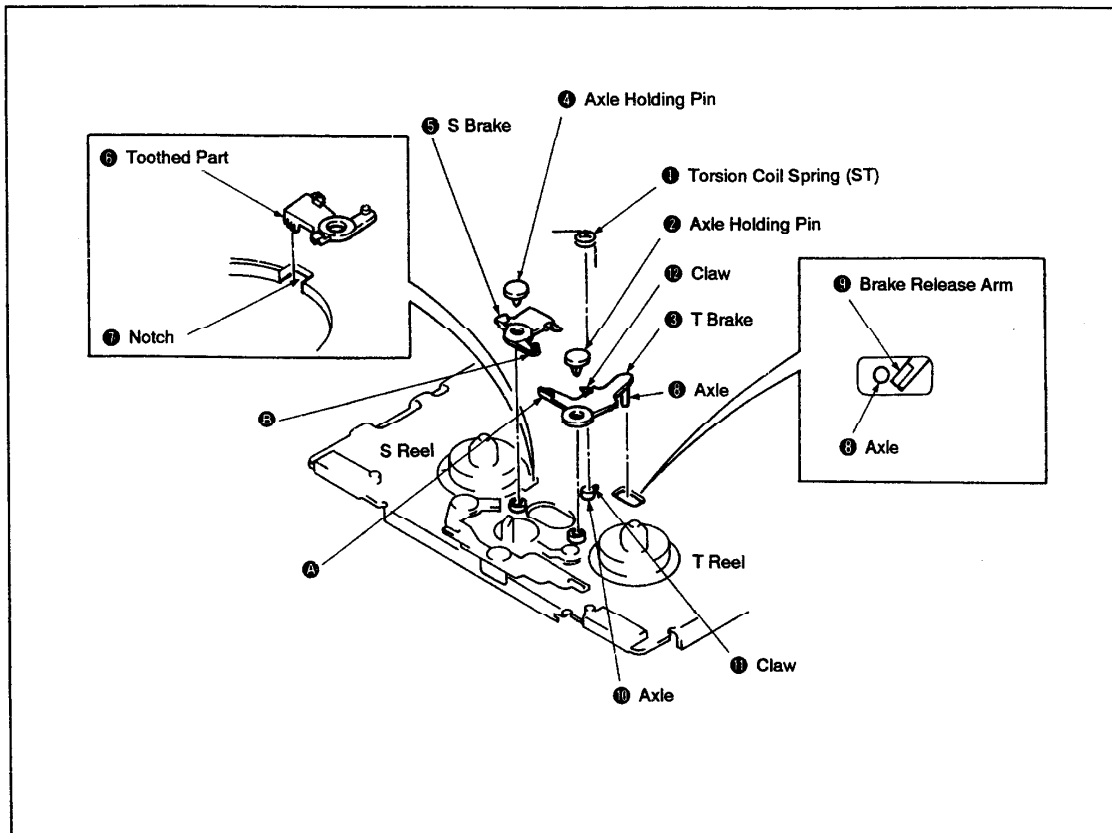


Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

- 1) Remove the screw ①, then remove the TL holding plate ②.
- 2) Remove the axle holding pin ③, then remove the LB brake ④.
- 3) Remove the axle holding pin ⑤, then remove the LB lever ⑥.

2. Installation (See Fig. 3-5.)

- 1) Mount the LB lever ⑥ matching it to pin ⑦ of the LB gear, then secure it with the axle holding pin ⑤.
- 2) Insert the pin ③ into the notch ⑨ of the LB lever ⑥, then mount the LB brake ④ while inserting the toothed part ⑩ into the notch ⑪.
- 3) Insert the axle holding pin ③.
- 4) Align the dowel ⑫ with the hole ⑬, then mount the TL holding plate and secure it with the screw ①.

Note: Confirm that the claws of axle holding pins ③ and ⑤ are not broken before assembling.

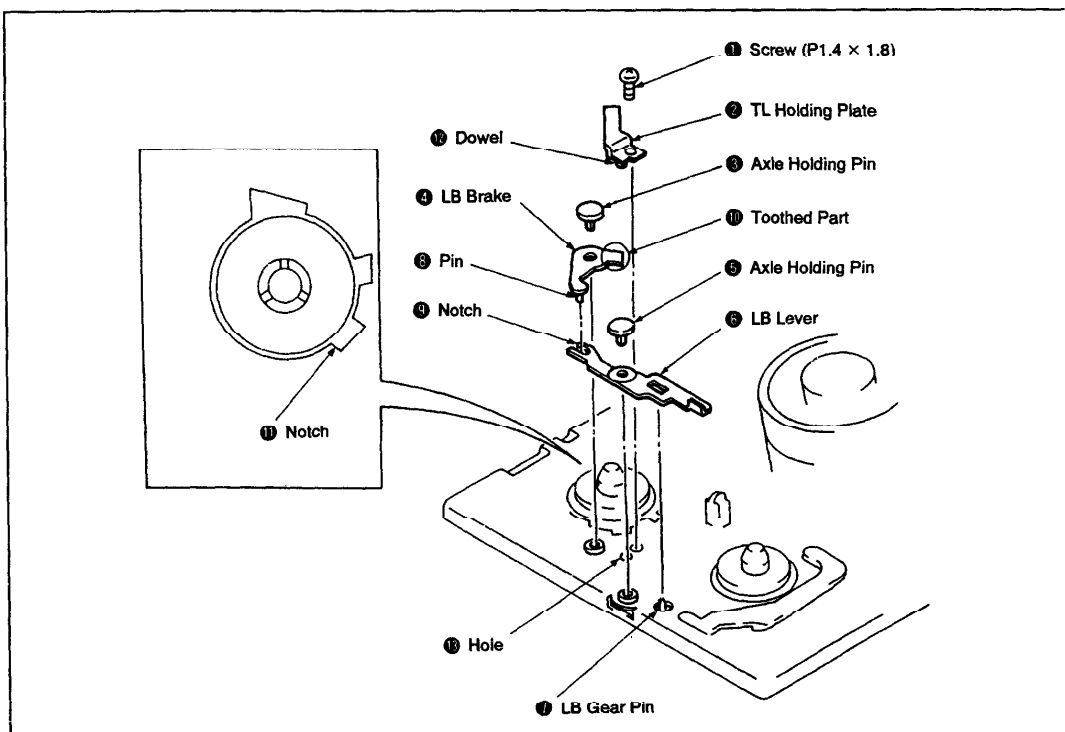


Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

- 1) While pushing the claw ① in the direction of the arrow, remove the LB release arm ②.

2. Installation (See Fig. 3-6.)

- 1) Fit the LB release arm ② to the axle ③, insert protrusions ⑤, ⑥, ⑦, ⑧ into the three holes ④, then secure with the claw ①.

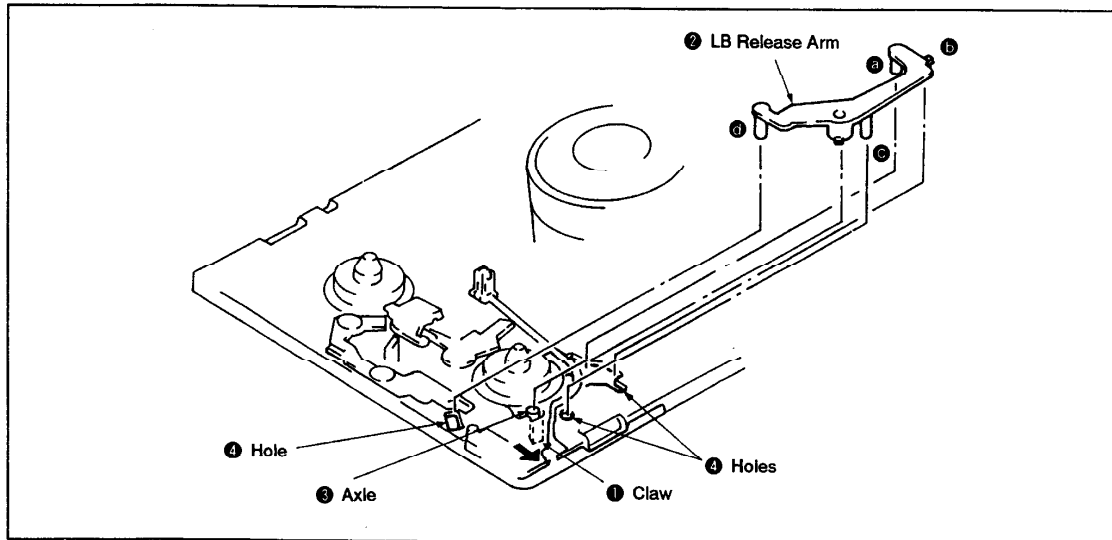


Fig. 3-6.

3-7. RK STOPPER, RK STOPPER ARMS

1. Removal (See Fig. 3-7.)

- 1) Remove the torsion coil spring (RK) ①.
- 2) Open the chassis claw ②, then remove the RK stopper arm ③.
- 3) Remove the RK stopper ④.

2. Installation (See Fig. 3-7.)

- 1) Mount the RK stopper ④ onto the axle ⑤.
- 2) Mount the RK stopper arm ③ onto the axle ⑥, insert Pin ⑩ into hole ⑪, then hook the claw ② of the chassis to the hole ⑦.
- 3) Insert the torsion coil spring (RK) ① into the axle ⑤, then hook it to claws ⑧ and ⑨.

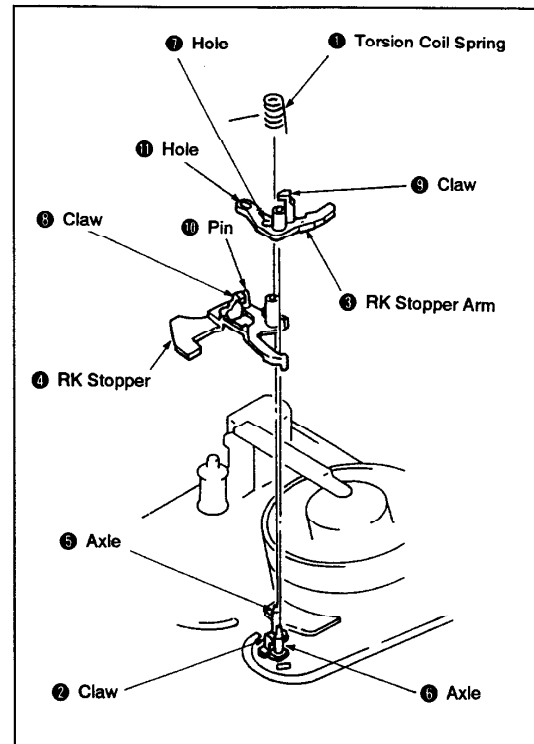


Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

1. Removal (See Fig. 3-8.)

- 1) Set the **[B]** mode.
- 2) Remove the stopper washer ①, then remove the pinch arm assembly ②.
- 3) Bend the claw ④ inside hole ③ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ⑤.
- 4) Remove the TG-7 arm assembly ⑥.

2. Installation (See Fig. 3-8.)

- 1) Grease the inner surfaces of hole ⑦ (See Fig. A).
- 2) Insert the axle ⑨ of the TG-7 arm assembly ⑥ into the hole ⑦.
- 3) Grease the shaded section ⑧ (See Fig. A).
- 4) Insert the TG-7 plate spring ⑤ into the hole ③, then secure it with the claw ④.
- 5) Apply half a drop of oil to the axle ④ (See Fig. B).
- 6) Fit the pinch arm assembly ② to the axle ④ and insert the pinch roller sub arm assembly tab ⑩ into the ⑪ part.
- 7) Install the stopper washer ①.

Note:

- Take care not to grease the screw ⑪ of the TG-7 arm assembly ⑥ (See Fig. A).
- When fitting the pinch arm assembly ② to the axle ④, make sure that it does not touch the TG-7 guide ⑫ or the rubber roller ⑬.
- After assembling, be sure to perform tape path adjustment as described in section 4.

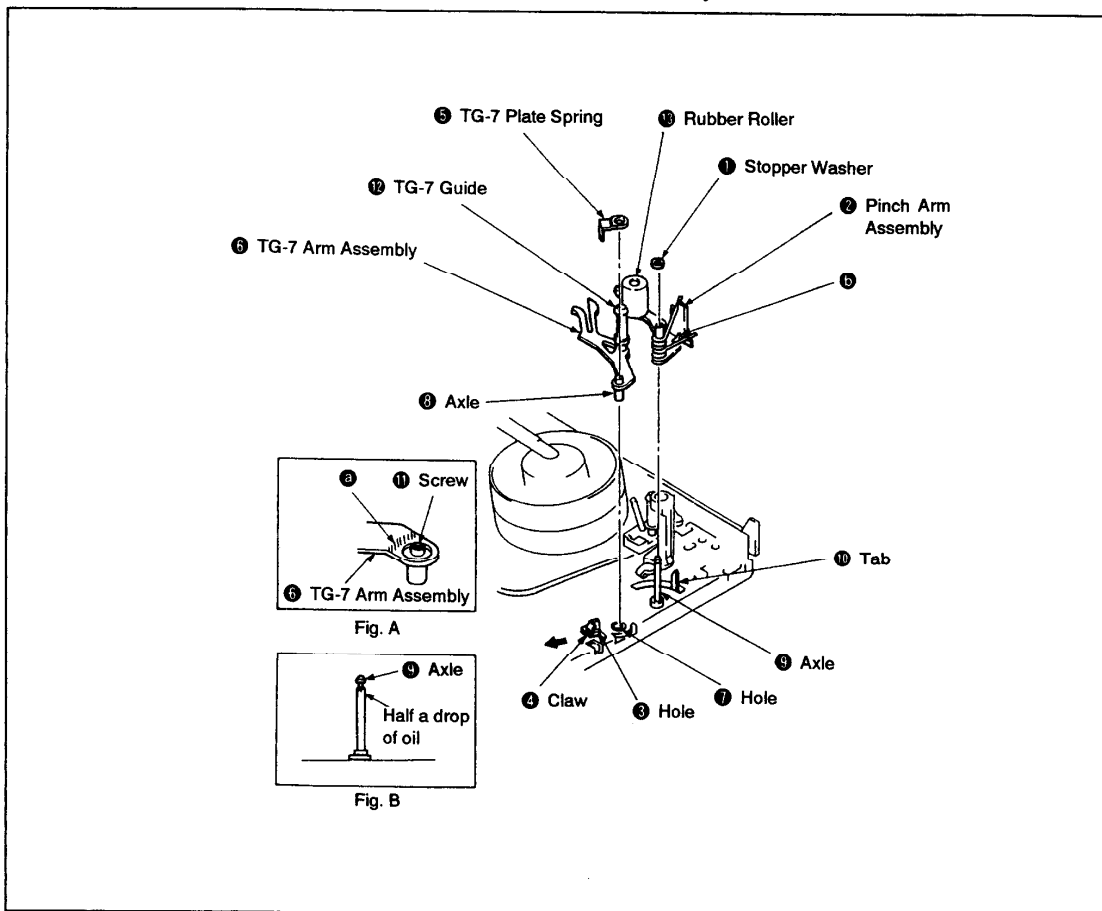


Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

- 1) Remove the TG-2 upper flange assembly ①.
- 2) Remove the TG-2 roller ②, the TG-2 sleeve ③, the TG-2 lower flange ④ and the compression spring ⑤.

2. Installation (See Fig. 3-9.)

- 1) Mount the compression spring ⑤, the TG-2 lower flange ④, the TG-2 sleeve ③ and the TG-2 roller ② to the axle.
- 2) Secure the TG-2 upper flange ① to the axle by rotating it 4 to 6 turns.

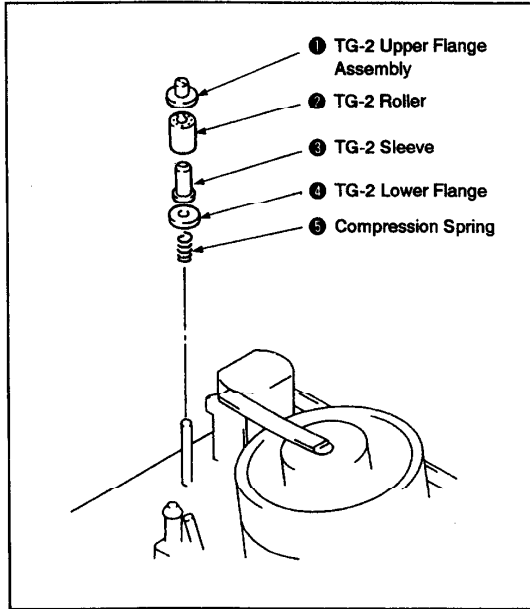


Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

- 1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ① upper surface to 18.6 mm by turning the TG-2 upper flange ①.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

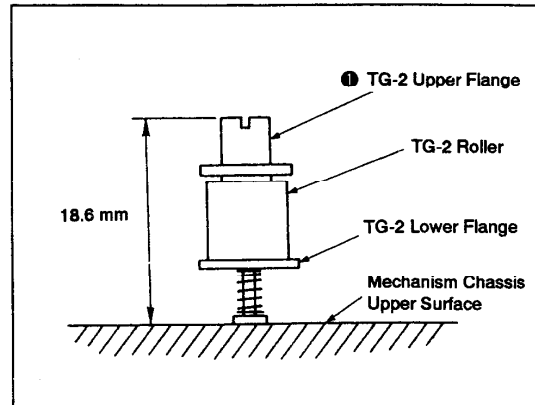


Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

- 1) Remove the S brake and T brake as described in section 3-4.
- 2) Remove the TL holding plate as described in section 3-5.
- 3) Remove the tension regulator band assembly as described in section 3-11.
- 4) Remove the S reel table assembly ①.
- 5) Turn the stopper ② approx. 90° in the direction of the arrow ③.
- 6) While sliding the LB release arm ④ in the direction of the arrow ⑤, remove the T reel table assembly ⑥.

2. Installation (See Fig. 3-11.)

- 1) Apply half a drop of oil to the axle ⑦ (See Fig. A).
- 2) Move the RK gear ⑧ in the direction of the arrow ⑨ and the TS brake ⑦ in the direction of the arrow ⑩, putting them out of the way.
- 3) While sliding the LB release arm ④ in the direction of the arrow ⑤, mount the T reel table assembly ⑥ onto the axle ⑦, then turn the stopper ② in the direction of the arrow ③ as far as it will go.
- 4) Apply half a drop of oil to the axle ⑧ (See Fig. B).
- 5) Move the RK gear ⑧ in the direction of the arrow ⑨, the UL brake ④ in the direction of the arrow ⑥ and the LB brake ⑩ in the direction of the arrow ⑪, putting them out of the way.
- 6) Mount the S reel table ① onto the axle ⑧.
- 7) Mount the tension regulator band assembly as described in section 3-11.
- 8) Mount the TL holding plate as described in section 3-5.
- 9) Mount the S brake and T brake assemblies as described in section 3-4.

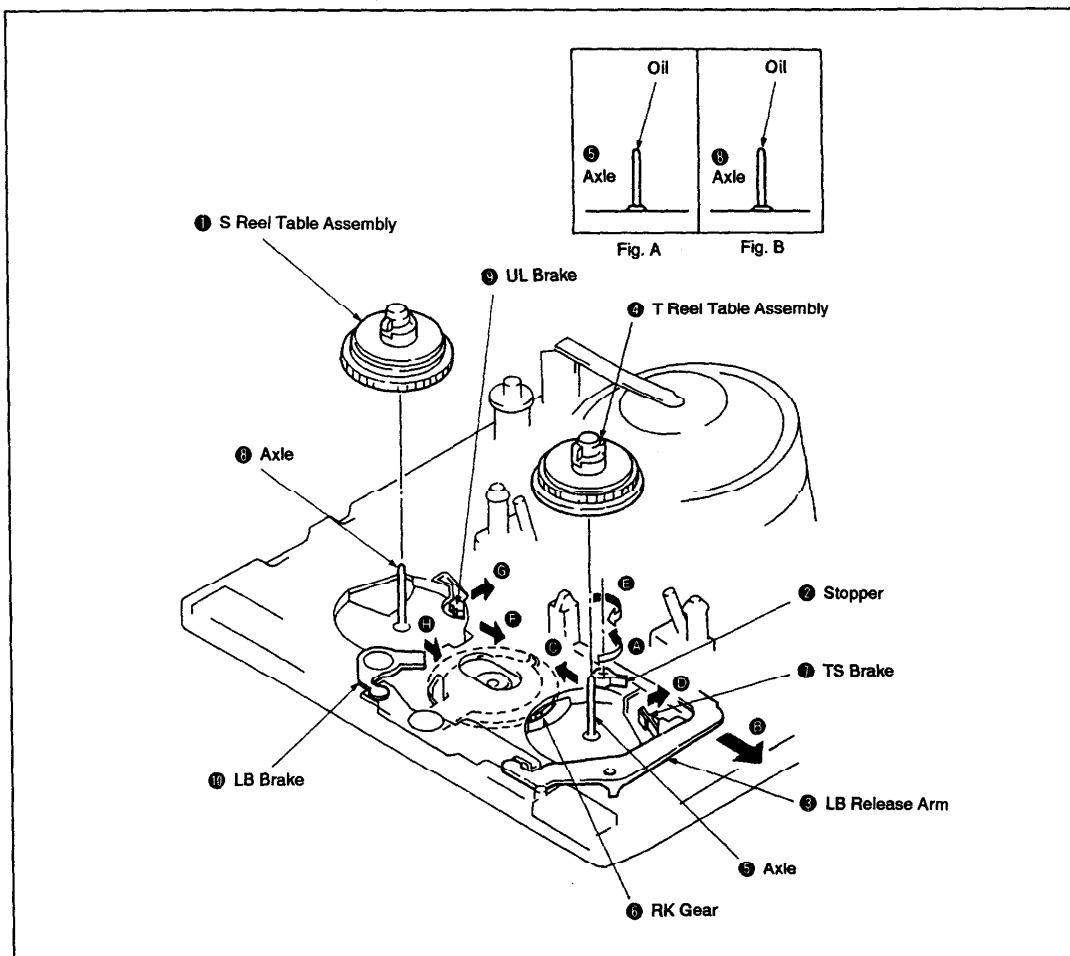


Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

- 1) Remove the TL holding plate as described in section 3-5.
- 2) Remove the screw ①.
- 3) Using a thin screwdriver or the like, remove the tension regulator band assembly ④ from the axle ③ of tension regulator arm assembly ②.
- 4) Remove the tension spring ⑤.
- 5) Remove the stopper washer ⑥ from the back of the mechanism chassis, then remove the tension regulator arm assembly ②.
- 6) Open the claw ⑦, then remove the adjust arm ⑧.

Note: When removing the tension regulator band assembly ④, take care not to twist or bend it, and not to touch the felt surface ⑨.

2. Installation (See Fig. 3-12.)

- 1) Engage the adjust arm ⑧ in the position shown in Fig. A, then close the claw ⑦.
- 2) Apply half a drop of oil to the hole ⑩.
- 3) Mount the tension regulator arm assembly ②, then insert it into the slot ⑪ so that the ② part comes to the arrow A side of the switch lever assembly (See Fig. B).

- 4) While holding the tension regulator arm assembly ② from the mechanism chassis front, secure it with the stopper washer ⑥ from the back.
- 5) Hook the R hook of the tension spring ⑤ to the adjust arm ⑧ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ②.
- 6) Mount the tension regulator band assembly ④ onto the axle ③ of tension regulator arm assembly ②, and place it so that the felt surface ⑨ comes against the shaded portion of the S reel table assembly ⑬.
- 7) Mount the tension regulator plate ⑫ of the tension regulator band assembly ④ so that it is aligned with the dowel ⑭ of the mechanism chassis, then secure it temporarily with the screw ①.
- 8) Mount the TL holding plate as described in section 3-5.
- 9) Adjust tension regulator FWD position as described in section 3-12.
- 10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ②, take care not to twist or bend it, and not to touch the felt surface ⑨.

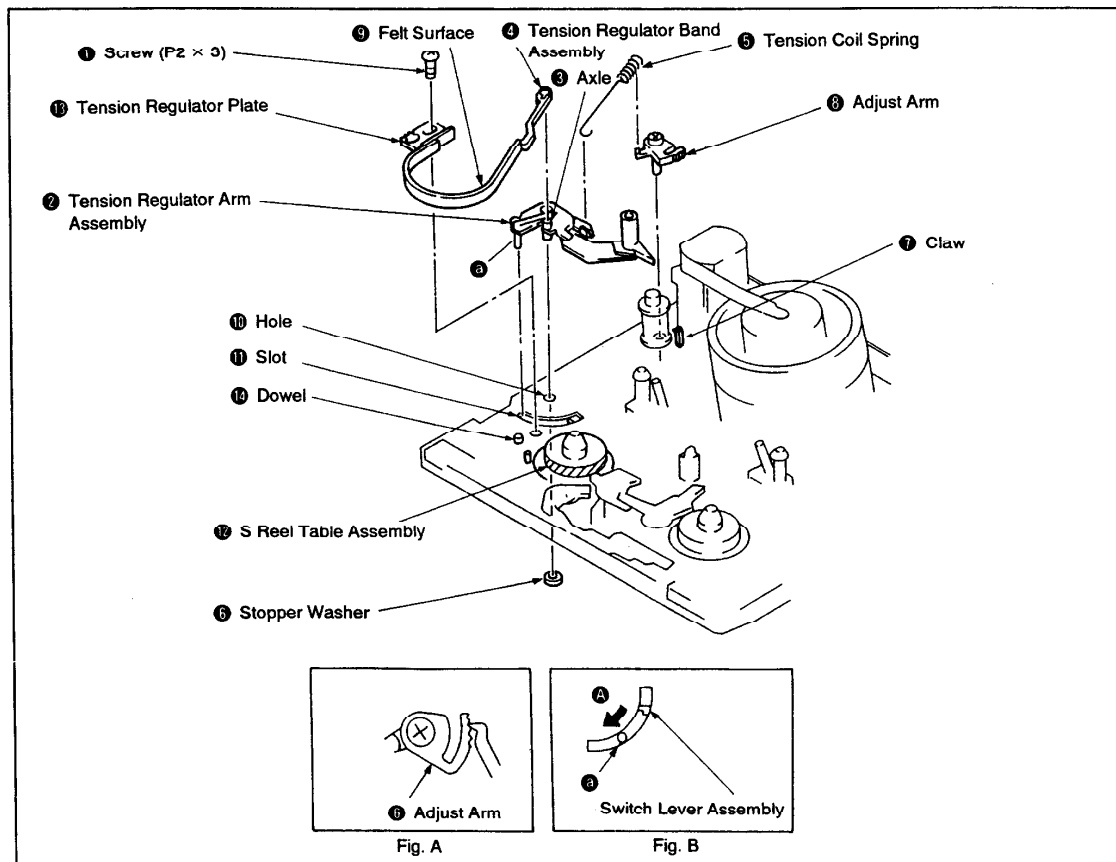


Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

- 1) Load a cassette tape and set the **[FWD]** mode.
- 2) Confirm whether the distance between ❶ part of the tension regulator arm and the groove ❷ of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
- 3) Loosen the fixing screw ❹ of the tension regulator band assembly ❸.
- 4) Slide the tension regulator plate ❺ in the direction of the arrow ❸ if the measured distance is over the specified range, and in the direction of the arrow ❹ if it is under that range. Then, fix it with the screw ❹.
- 5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

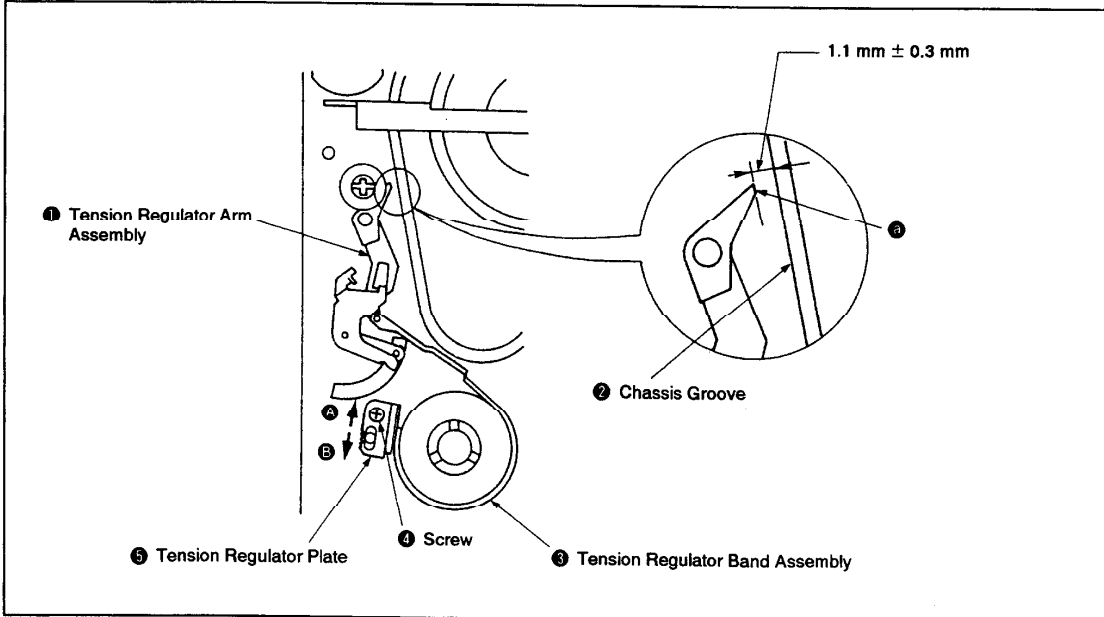


Fig. 3-13.

1. Removal (See Fig. 3-14.)

- Note:**
- When removing the drum assembly ⑥ from the mechanism chassis, take care not to cut the flexible board ① or the harness.
 - Take care not to touch the head tip ⑨.

- 1) Insert part **A** of the dew sensor **8** into the notch **11** of the mechanism chassis, then secure it with the screw **7**.
- 2) Mount the connector **10**.
- 3) Clamp the harness **15** of the dew sensor **8** with the reinforcing the claw **16** of the plate SS assembly (See Fig. A).
- 4) Insert the connector **2** and the flexible board **1** into the hole **12** of the mechanism chassis, align the drum assembly **6** with the two dowels **13** and secure it with the three screws **5**.
- 5) Align the axle ground terminal **2** with the two dowels **14** of the mechanism chassis and secure it with the screw **3**.
- 6) Mount the guide guard assembly as described in section 3-2.
- 7) Mount the two connectors **2** and the flexible board **1**.

-
- This diagram illustrates the assembly of the drum unit onto the base plate. The components are labeled as follows:
- 1 Flexible Board**: The main circuit board for the drum unit.
 - 2 Connectors**: Used to connect the flexible board to the base plate.
 - 3 Screw (P2 × 3)**: Screws used to secure the flexible board to the base plate.
 - 4 Head Tip**: The tip of the drum head.
 - 5 Drum Assembly**: The main drum unit.
 - 6 Axle Ground Terminal**: A terminal for the drum's axle ground.
 - 7 Screw (P1.4 × 1.8)**: Screws used to secure the drum assembly to the base plate.
 - 8 Dew Sensor**: A sensor mounted on the base plate.
 - 9 Connector**: A connector for the dew sensor.
 - 10 Dowels**: Dowels used to align the drum assembly with the base plate.
 - 11 Notch**: A notch in the base plate for the drum assembly.
 - 12 Hole**: A hole in the base plate for the drum assembly.
- An inset diagram shows the connection of the **13 Harness** to the **14 Claw** on the drum assembly.

— 18 —

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Set the **STOP** mode.
- 3) Remove the claw ①, then remove the eject lever ②.
- 4) Remove the stopper washer ③, then remove the switch lever assembly ④.
- 5) Remove the pinch roller load spring ⑤.
- 6) Remove the stopper washer ⑥, then remove the pinch roller sub arm assembly ⑦.

2. Installation (See Fig. 3-15.)

- 1) Grease the axle ⑧ (See Fig. A).
- 2) Assemble by inserting ⑧ part of the pinch roller sub arm assembly ⑦ into the slot ⑨, then insert the pin ⑩ into the loading lever assembly notch ⑪.
- 3) Secure with the stopper washer ③.

- 4) Mount the pinch roller load spring ⑤ by catching its ⑫ end between the claw ⑦ and the chassis side and its ⑬ end to the claw ⑦.
- 5) Apply half a drop of oil to the axle ⑭ (See Fig. B).
- 6) Align the groove ⑫ of the switch lever assembly ④ with the mode detector switch protrusion ⑮, mount it on the axle ⑭, then insert the pin ⑩ into the drive gear (left) assembly ⑯ outer groove.
- 7) Secure with the stopper washer ③.
- 8) Mount the eject lever ② and close the claw ①.
- 9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ④ onto the axle ⑭ with the tension regulator arm assembly installed, set the pin ⑩ to the arrow ⑰ side of the switch lever assembly ④.

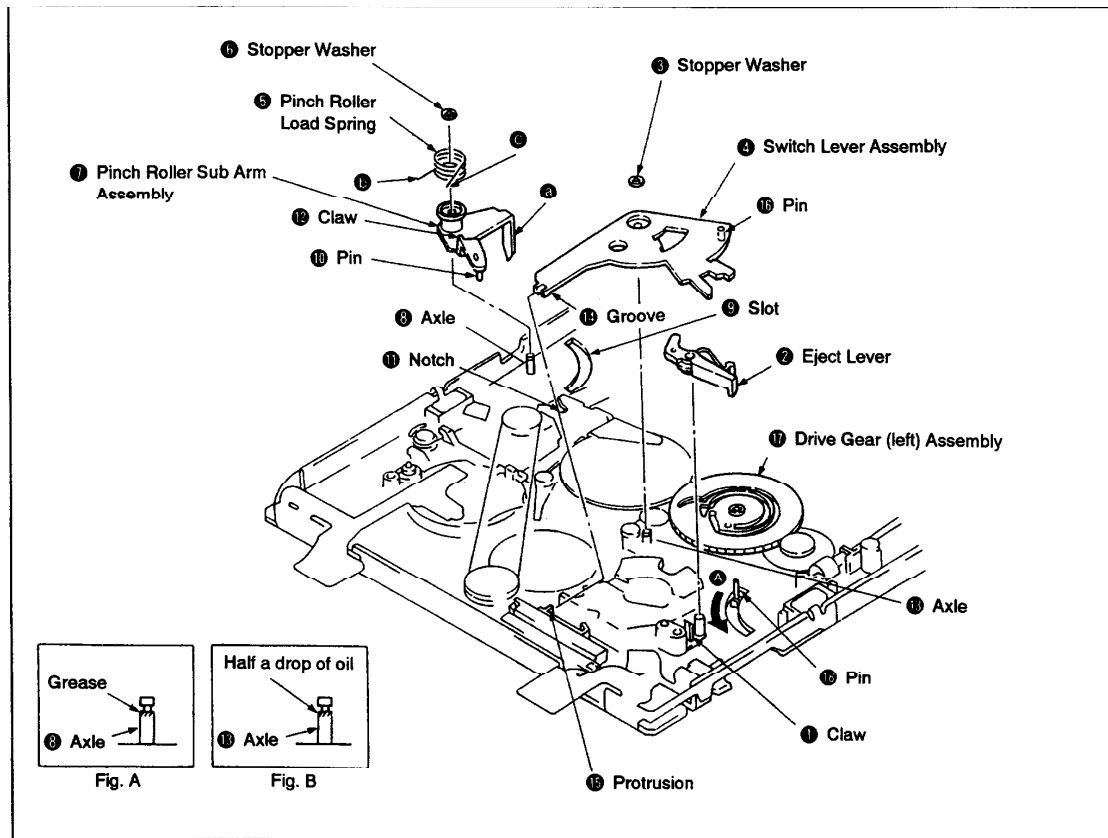


Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the pinch roller sub arm assembly as described in section 3-14.
- 3) Set the **STOP** mode.
- 4) Remove the stopper washer ①, then remove the RC gear assembly ② from the axle ④ with the timing belt (L) ③ attached.
- 5) Remove the timing belt (L) ③ from the idler pulley assembly ⑤.
- 6) Remove the stopper washer ⑥ and remove the loading lever assembly ⑧ while pushing the claw ⑦ in the direction of the arrow A.
- 7) Turn the stopper ⑨ approx. 90° in the direction of the arrow B.
- 8) Remove the connecting gear assembly ⑪ from the axle ⑩ with the timing belt (S) ⑩ attached.
- 9) Remove the timing belt (S) ⑩ from the idler pulley assembly ⑤.

Note: When removing the connecting gear ⑪, take care not touch the flange section ⑬.

2. Installation (See Fig. 3-16.)

- 1) Apply half a drop of oil to the axle ⑩ (See Fig. F).
- 2) Hook one end of the timing belt (S) ⑩ onto the connecting gear assembly ⑪ and the other end onto gear ④ of the idler pulley assembly ⑤. (Refer to the figure.)
- 3) Mount the connecting gear assembly ⑪ with the timing belt (S) ⑩ attached to the axle ⑩.
- 4) Turn the stopper ⑨ in the direction of the arrow C as far as it will go.
- 5) Apply half a drop of oil to the axle ⑩ (See Fig. A).
- 6) Fit the loading lever assembly ⑧ to the axle ⑩, secure the ⑪ part with the claw ⑦ and place the pin ⑬ into the groove of the drive gear (right) assembly ⑫.
- 7) Install the stopper washer ⑥.
- 8) Place the timing belt (L) ③ around the gears of the RC gear assembly ② indicated in Fig. B, and its opposite side around the gear ④ of the idler pulley assembly ⑤. (See Fig. E.)
- 9) Mount the RC gear assembly ② onto the axle ④ with the timing belt (L) ③ attached, and engage it with the gear of the RK gear assembly ⑬.
- 10) Install the stopper washer ⑥.
- 11) Grease parts of the loading lever assembly ⑧ indicated in Fig. C.
- 12) Mount the pinch roller sub arm assembly as described in section 3-14.
- 13) Mount the DC motor (capstan motor) as described in section 3-3.

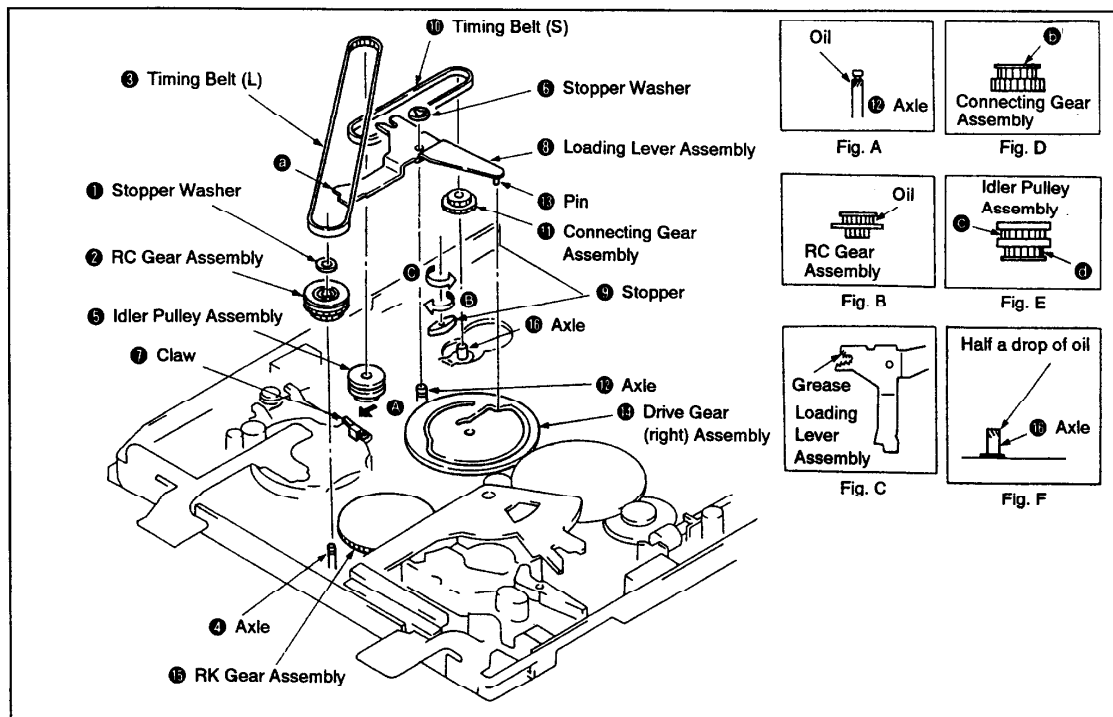


Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

1. Removal (See Fig. 3-17.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the switch lever assembly as described in section 3-14.
- 3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
- 4) Set the **STOP** mode.
- 5) Remove the stopper washer ①, then remove the idler pulley ②.
- 6) Open the claw ③, then remove the TS brake assembly ④.
- 7) Remove the torsion coil spring (LB) ⑤.
- 8) Remove the stopper washer ⑥, then remove the LB gear assembly ⑦.
- 9) Remove the RK gear assembly ⑧.

Note: When removing the idler pulley ②, take care not to touch the flange section ②. (See Fig. C.)

2. Installation (See Fig. 3-17.)

- 1) Apply half a drop of oil to the axle ⑨ (See Fig. A).
- 2) Mount the RK gear assembly ⑧ onto the axle ⑨, keeping it in horizontal position.
- 3) Apply half a drop of oil to the axle ⑩ (See Fig. B).
- 4) Mount the LB gear assembly ⑦ onto the axle ⑩ and secure it with the stopper washer ⑥.
- 5) Insert the torsion coil spring (LB) ⑤ into the axle ⑪, then hook it to the mechanism chassis notch ⑫ and to the tab ⑬.
- 6) Mount the TS brake assembly ④ and close the claw ③.
- 7) Apply half a drop of oil to the axle ⑩ (See Fig. D).
- 8) Mount the idler pulley ② onto the axle ⑩, then secure it with the stopper washer ①.
- 9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
- 10) Mount the switch lever assembly as described in section 3-14.
- 11) Mount the DC motor (capstan motor) as described in section 3-3.

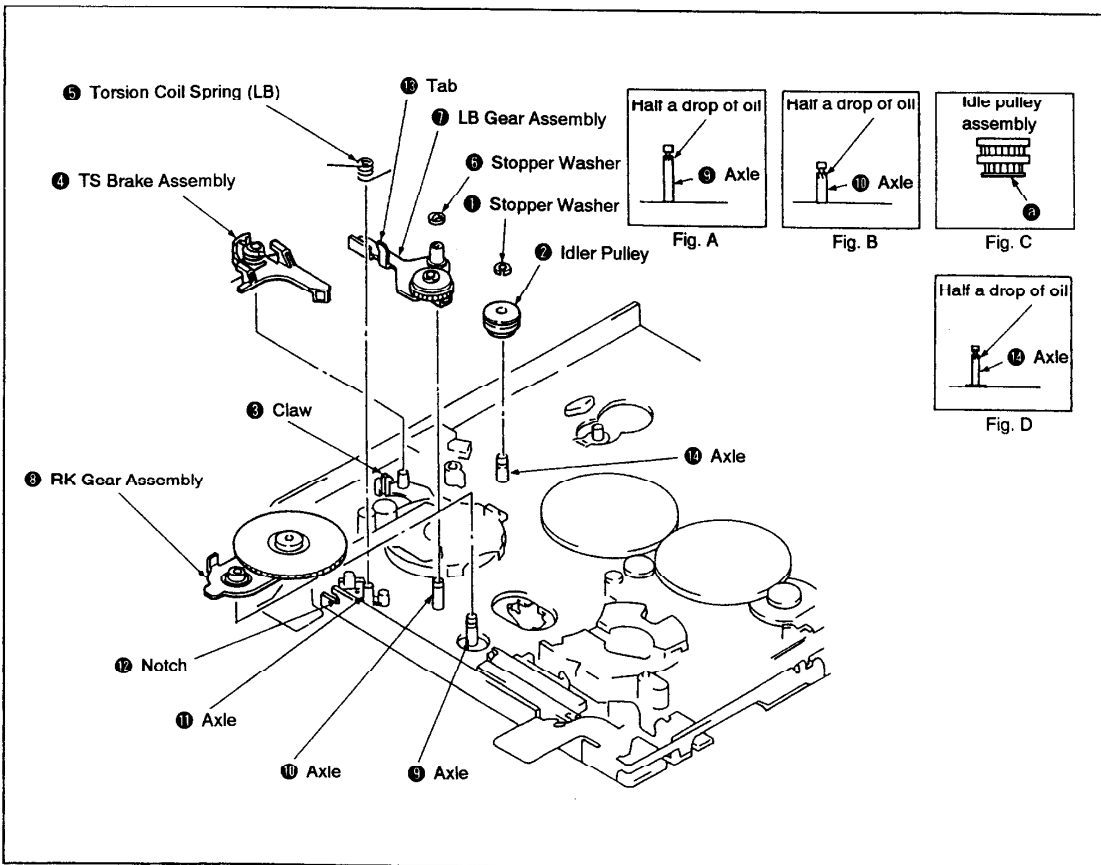


Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

- 1) Remove the switch lever assembly as described in section 3-14.
- 2) Remove the stopper washer ①, then remove the UL gear ②.
- 3) Remove the UL arm ③, the 1.6 mm-diameter poly washer ④ and the LB plate spring ⑤.
- 4) Remove the UL brake ⑥.

2. Installation (See Fig. 3-18.)

- 1) Mount the UL brake ⑥.
- 2) Apply half a drop of oil to the axle ⑦ (See Fig. A).
- 3) Mount the LB plate spring ⑤ to the axle ⑦ as shown in Fig. B, then install the 1.6mm-diameter poly washer ④.
- 4) Mount the UL arm ③ to the axle ⑦ so that the protrusion ⑧ comes into the groove ⑨ of the UL brake ⑥.
- 5) Mount the UL gear ② to the axle ⑦ and engage it with the gear of the drive gear (left) assembly ⑩.
- 6) Install the stopper washer ①.
- 7) Mount the switch lever assembly as described in section 3-14.

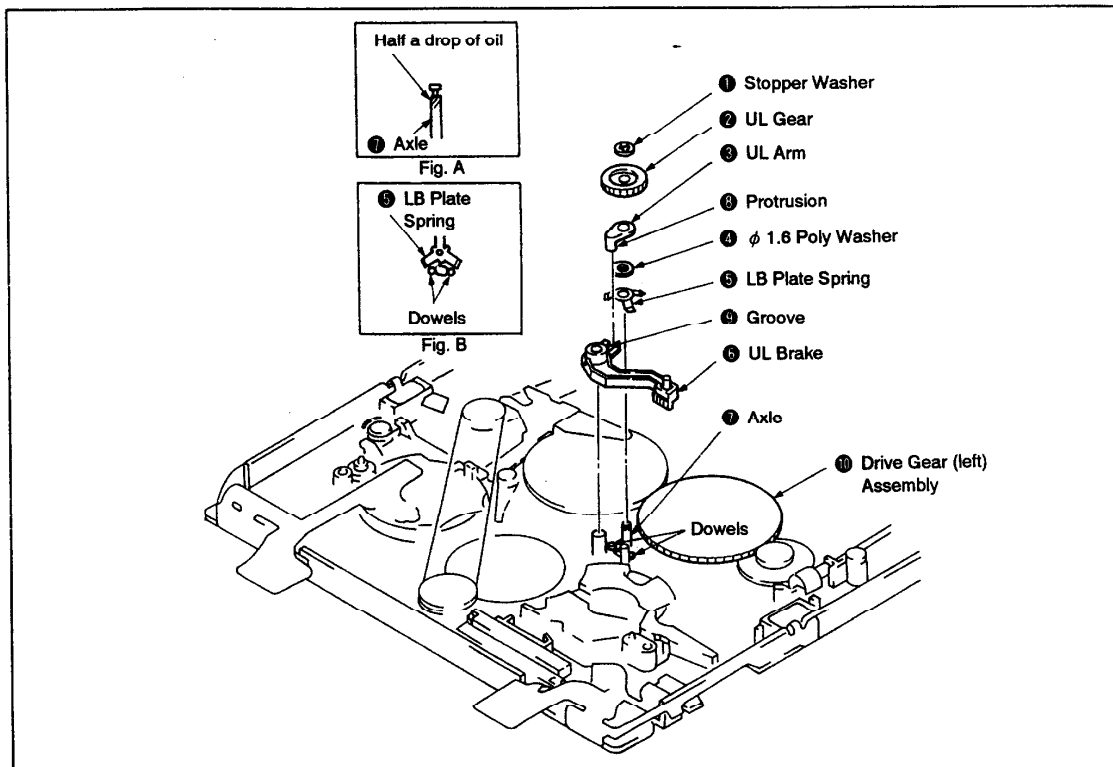


Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY. DRIVE GEAR (RIGHT) ASSEMBLY

1. Removal (See Fig. 3-19.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the drum unit as described in section 3-13.
- 3) Remove the switch lever assembly as described in section 3-14.
- 4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 5) Set the **STOP** mode.
- 6) Remove the screw ①, then remove the coaster plate spring ② and the coaster (right) assembly ③.
- 7) Remove the two screws ④, then remove the reinforcing plate TT ⑤.
- 8) Remove the stopper washer 1.5 ⑥, then remove the drive gear (right) assembly ⑦.

2. Installation (See Fig. 3-19.)

- 1) Grease the points of the mechanism chassis shown in Fig. A.
- 2) Apply half a drop of oil to the axle ⑩ (See Fig. F).
- 3) Grease pin ⑨, axle ⑩ and dowel ⑪ of the coaster (right) assembly ③ (See Fig. D).
- 4) Mount by aligning the pin ⑨ and the axle ⑩ with the slot ⑪ of the mechanism chassis.
- 5) Move the brake release arm ⑫ in the direction of the arrow ⑬ to put it out of the way.

- 6) Mount the drive gear (right) assembly ⑦ to the axle ⑩, and engage it with the drive gear (left) assembly ⑧ as shown in Fig. B.
- 7) Align the ⑨ part with the ⑩ part, and the hole ⑪ with the pin ⑫ of the coaster (right) assembly ③.
- 8) Install the stopper washer 1.5 ⑥.
- 9) Mount by aligning the coaster plate spring ② with the axle ⑩ of the coaster (right) assembly ③ and pin ⑫, then secure with the screw ①.
- 10) Mount the reinforcing plate TT ⑤ aligning it with the dowel ⑪, then tighten the two screws ④ in the indicated order.
- 11) Grease the points indicated in Figs. C and E.
- 12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 13) Mount the switch lever assembly as described in section 3-14.
- 14) Mount the drum unit as described in section 3-13.
- 15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:

- Screw ① should be tightened with a tightening torque of approx. 500g*cm. If tightened too much, the coaster (right) assembly ③ and the coaster plate spring ② will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

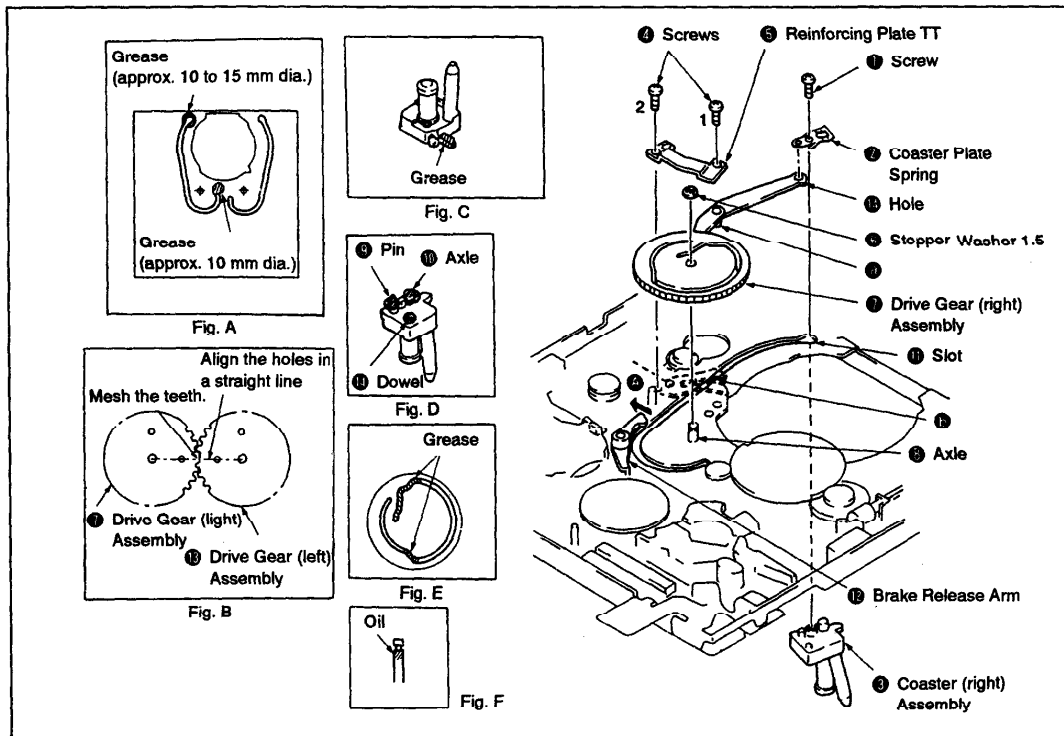


Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the drum assembly as described in section 3-13.
- 3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
- 4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 5) Remove the coaster (right) assembly and the drive gear (right) assembly as described in section 3-18.
- 6) Remove the screw ①, then remove the coaster plate spring ② and the coaster (left) assembly ③.
- 7) Remove the two screws ④, then remove the reinforcing plate SS assembly ⑤.
- 8) Remove the stopper washer 1.5 ⑥, then remove the drive gear (left) assembly ⑦.

2. Installation (See Fig. 3-20.)

- 1) Grease the points of the mechanism chassis shown in Fig. A.
- 2) Apply half a drop of oil to the axle ⑩ (See Fig. E).
- 3) Grease pin ④, axle ⑩ and dowel ⑪ of the coaster (left) assembly ③ (See Fig. B).
- 4) Mount by aligning the pin ④ and the axle ⑩ with the slot ⑪ of the mechanism chassis.
- 5) Fit the drive gear (left) assembly ⑦ to the axle ⑩, and mount so that the gear engages with the wheel gear ⑫ and the UL gear ⑬.

- 6) Align the ③ part with the slot ⑪, and the hole ⑭ with the pin ④ of the coaster (left) assembly ③.
- 7) Install the stopper washer 1.5 ⑥.
- 8) Mount by aligning the coaster plate spring ② with the axle ⑩ and pin ④ of the coaster (left) assembly ③, then secure with the screw ①.
- 9) Mount the reinforcing plate SS assembly ⑤ aligning it with the dowel ⑪, then tighten the two screws ④ in the indicated order.
- 10) Grease points indicated in Figs. C and D.
- 11) Mount the coaster (right) assembly and the drive gear (right) assembly as described in section 3-18.
- 12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 14) Mount the drum assembly as described in section 3-13.
- 15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:

- Screw ① should be tightened with a tightening torque of approx. 500g·cm. If tightened too much, the coaster (right) assembly ③ and the coaster plate spring ② will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

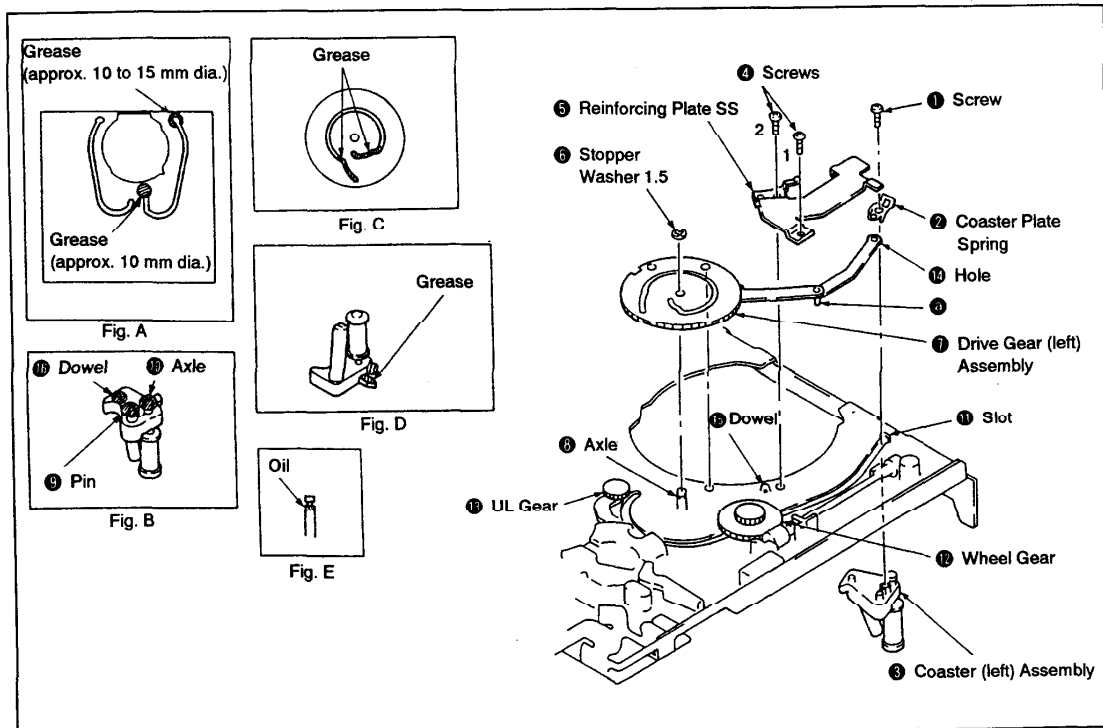


Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

- 1) Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 4) Remove the drive gear (right) assembly as described in section 3-18.
- 5) Remove the drive gear (left) assembly as described in section 3-19.
- 6) Remove the two screws ①, then remove the loading motor assembly ②.
- 7) Remove the brake release arm ③.
- 8) Remove the stopper washer ④, then remove the wheel gear ⑤.
- 9) Remove the worm assembly ⑥ from the six claws ⑦.

2. Installation (See Fig. 3-21.)

- 1) Mount the worm assembly ⑥, matching it to the six claws ⑦.
- 2) Grease the shaded parts of the worm assembly ⑥ (five places) (see Fig A).
- 3) Apply half a drop of oil to the axle ⑧ (See Fig. B).
- 4) Fit the wheel gear ⑤ to the axle ⑧ and engage it with the gear of the worm assembly ⑥.
- 5) Mount the brake release arm ③.
- 6) Grease the whole perimeter of the gear of the loading motor assembly ②.
- 7) Align the loading motor assembly ② with the mechanism chassis and secure it with the two screws ①.
- 8) Mount the drive gear (left) assembly as described in section 3-19.
- 9) Mount the drive gear (right) assembly as described in section 3-18.
- 10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 12) Mount the DC motor (capstan motor) as described in section 3-3.

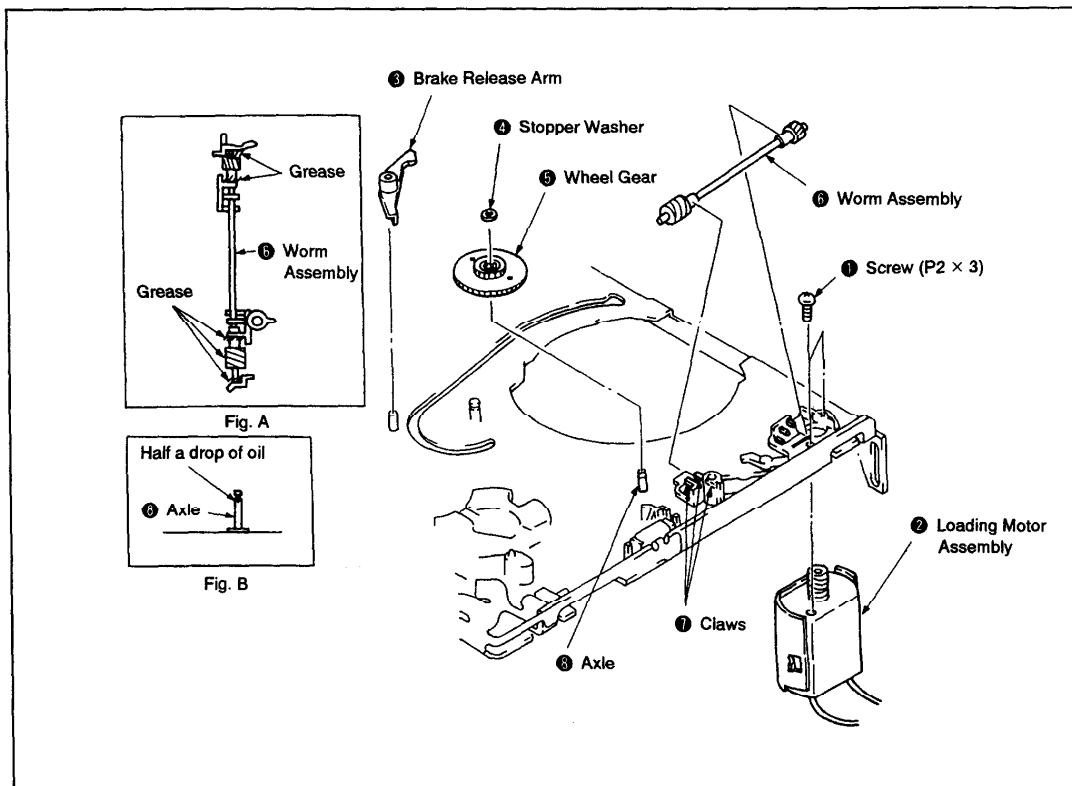


Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.
- 1) Detach the six solderings ①, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
- 2) Remove the two screws ② (See Fig. 3-22).
- 3) Mount the jig ④ (Ref. No. J-7) with the two supplied screws ③, then screw the attached hexagon socket screws ⑤ to the jig ④. The rotary upper drum ⑥ will move upward and come off (See Fig. 3-23).

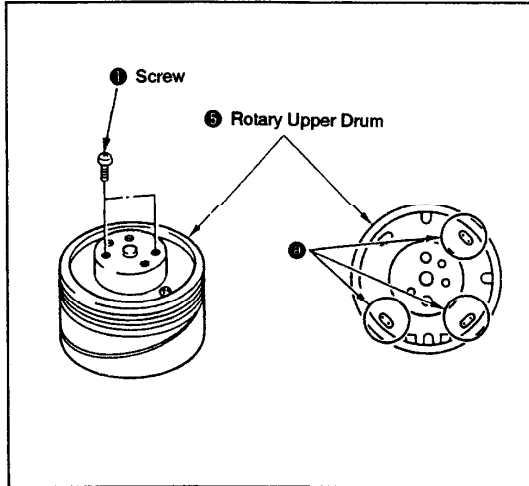


Fig. 3-22.

2. Installation

- 1) Wipe clean the flange surface and the rotary upper drum ⑤ surface that makes contact with it, and confirm that they are free from dirt and scratches.
 - 2) Insert the jig ⑦ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ⑤ by passing the jig through its positioning hole ⑥.
- Note:** Confirm that the terminals ⑧ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
- 3) Remove the jig ⑦ and push down the rotary upper drum ⑤ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ① alternately.
 - 4) Insert the jig ⑦ into the positioning hole ⑥ again and confirm that it goes in smoothly. If it does not, loosen the two screws ①, repeat step 3 of the Removal paragraph and restart the setting procedure.
 - 5) Tighten the screws ①.
 - 6) Solder the terminals ⑧ (② in Fig. 3-22).

Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

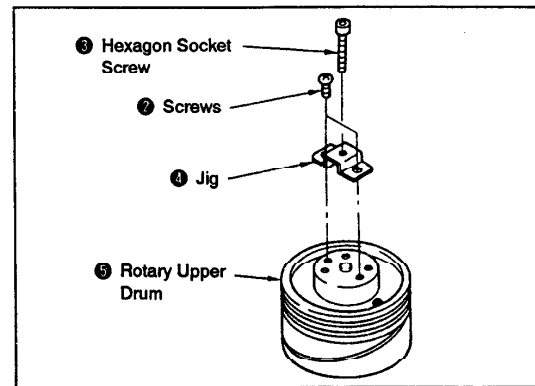


Fig. 3-23.

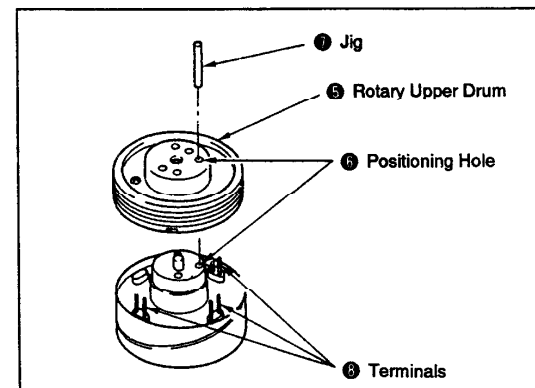


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

- 1) Set the torque cassette (Ref. No. J-6).
- 2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g*cm.
- 3) If the torque value does not meet the specification, adjust the adjust arm ①.

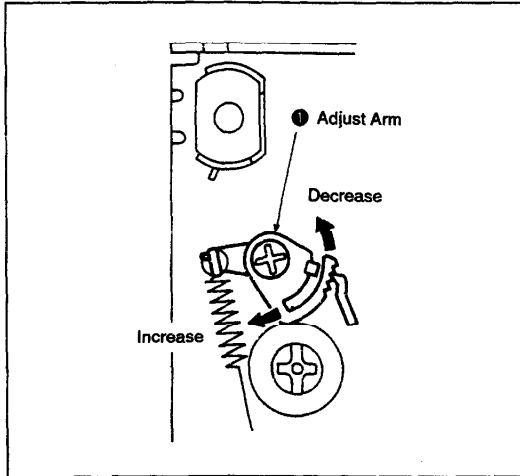


Fig. 3-25.

3-23. REEL TORQUE CHECK

- 1) Set the torque cassette.
- 2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g*cm.
- 3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g*cm.
- 4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g*cm.
- 5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

- Connect the TEST A and TEST B terminals to the COM terminal.

Example:

NTSC GV-8

PAL GV-8E

Connect Pins ① and pin ③ of CN017 on the
{ SV-34 board (GV-8) } to pin ② of it. (See Fig. 4-1)

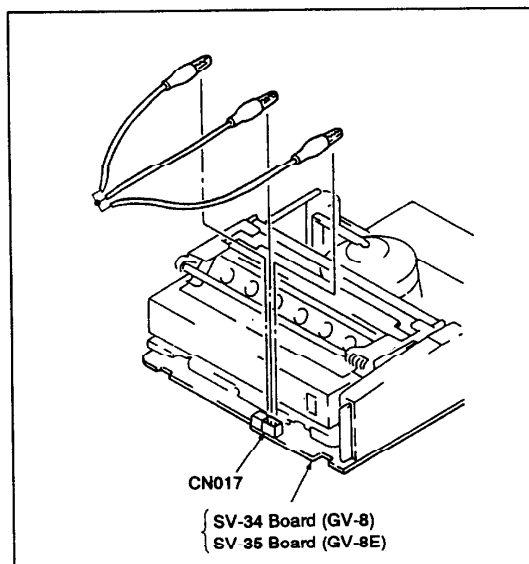


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).

Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.

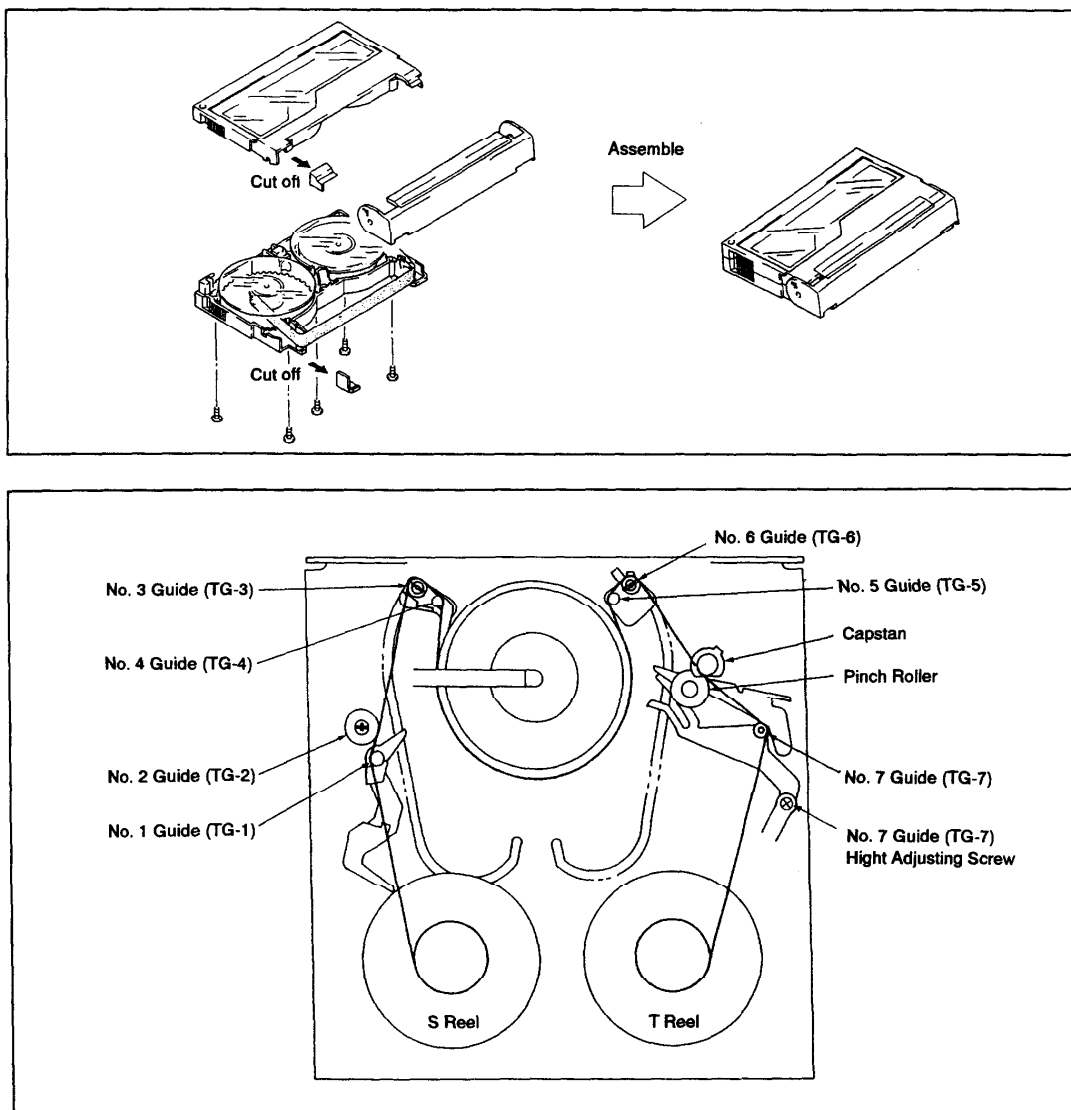


Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

- 1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
- 2) Connection of oscilloscope and output method of waveform.
CH 1: RF signal output of the drum head (V RF OUT)

Method for signal output:

Short-circuit the external trigger output (RF SW. P) and GND.

Example:

NTSC GV-8

PAI GV-8E

CH 1: Pin ③ (V RF OUT) of CN018 on the

{ SV-34 board (GV-8)

{ SV-35 board (GV-8E)

Method for signal output:

Short-circuit pin ① (GND) and pin ② (RF SW.P) of CN018 on the

{ SV-34 board (GV-8)

{ SV-35 board (GV-8E)

- 3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
- 4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

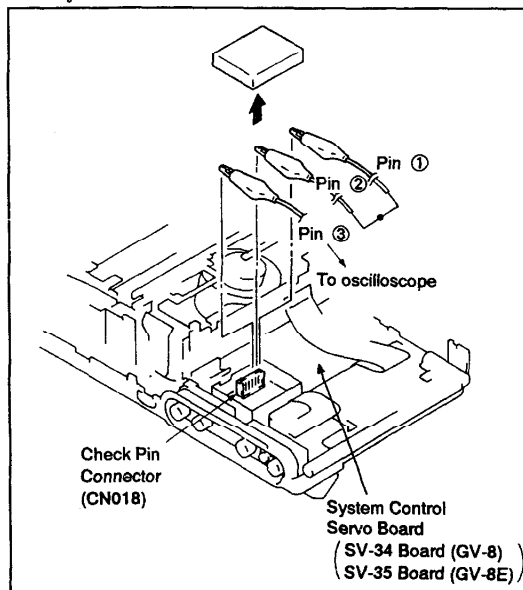


Fig. 4-3.

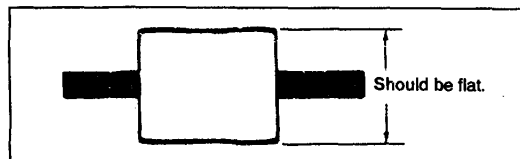


Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ①, loosen the lock screw ② a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ③.
- 3) Pass a hexagonal wrench, screwdriver or the like through the hole ④, loosen the lock screw ⑤ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ⑥.

Note: Take care not to loosen lock screws too much, since guides come loose easily.

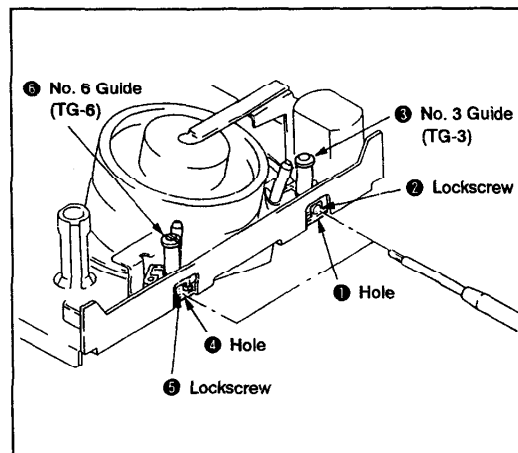


Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

- 1) Play back the alignment tape for tracking adjustment and set the track shift mode.
- 2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
- 3) Fix the No. 3 guide ③ by tightening its lock screw ②. Then confirm that the entrance side waveform has not changed.
- 4) Fix the No. 6 guide ⑥ by tightening its lock screw ⑤. Then confirm that the exit side waveform has not changed.

Note: The set screws ② and ⑤ should be tightened with a tightening torque of approx. 200g·cm $\pm$ 10%.
If tightened too much, there is danger of damaging the thread.

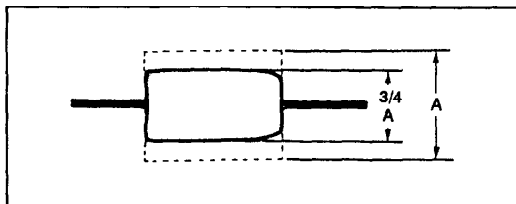


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

- 1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ① upper surface to 18.6 mm by rotating the TG-2 upper flange ①.

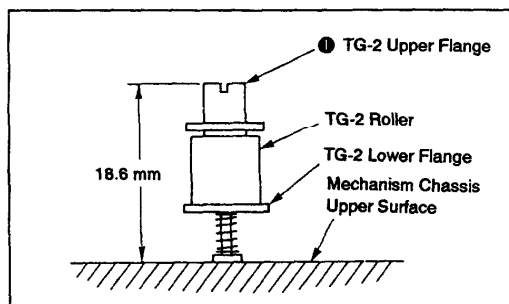


Fig. 4-7.

[Reference]

This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment (See Figs. 4-8. and 4-9.)

- 1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
 - 2) Confirm that the tape is not bent at the lower flange ② of the No. 2 guide (TG-2) ① (See Fig. 4-8). If it is, turn the upper flange ③ of the No. 2 guide (TG-2) ① clockwise with a screwdriver, lowering it until the tape is straightened.
 - 3) Play back the alignment tape for tracking adjustment.
 - 4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
 - 5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
 - 6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ③ of the No. 2 guide (TG-2) ① 90° counter-clockwise and repeat step 5.
- Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

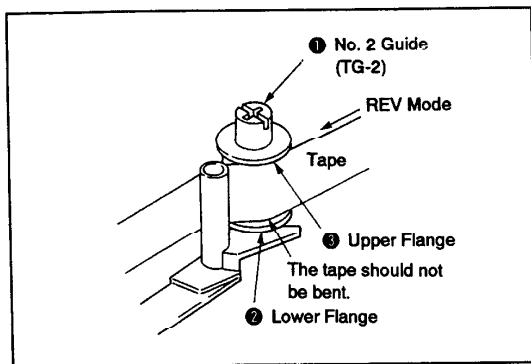


Fig. 4-8.

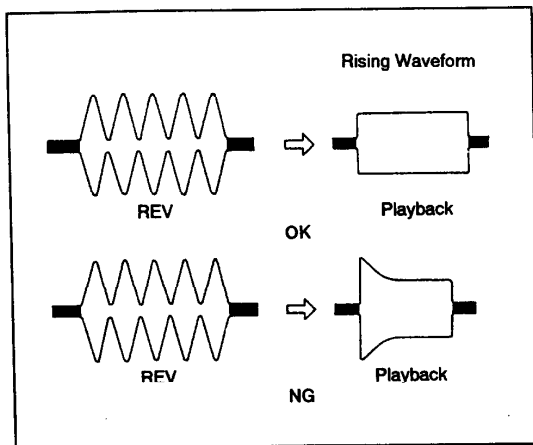


Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT (See Fig. 4-10.)

- 1) Play back the alignment tape for tracking adjustment and set the REV mode.
- 2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ① and the capstan ②. If it is, turn the height adjusting screw ④ of the No. 7 guide (TG-7) ③ until the tape is straightened.
- 3) Set the playback mode again and confirm that the tape is not bent between the capstan ② and the height adjusting screw ④ of the No. 7 guide (specification: 0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ③ until bending is within the specification (0.5 mm). If in the REV mode tape bending between the No. 6 guide (TG-6) ① and the capstan ② is 0.3 mm or less, adjustment can be considered completed.

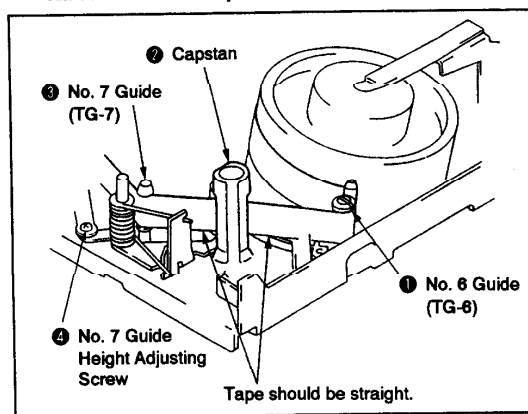


Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

- 1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
- 2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

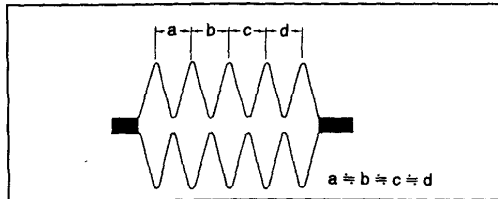


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

- 1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
- 2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
- 3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

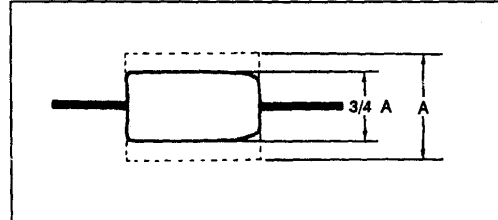


Fig. 4-12.

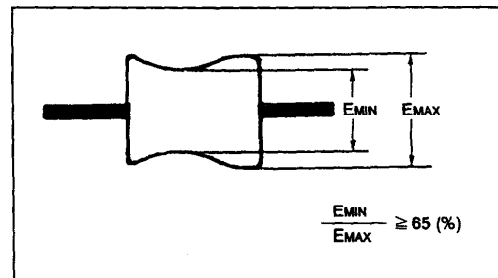


Fig. 4-13.

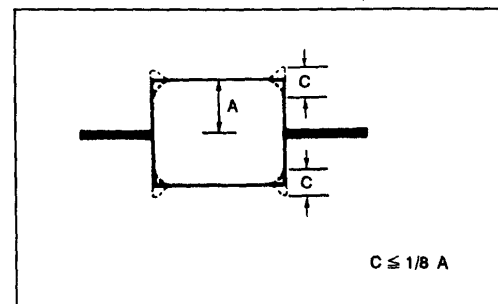


Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Cancel the track shift mode.
- 3) Eject the tape, then load it again.
- 4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
- 5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 6) Repeat steps 3) to 5) once more.

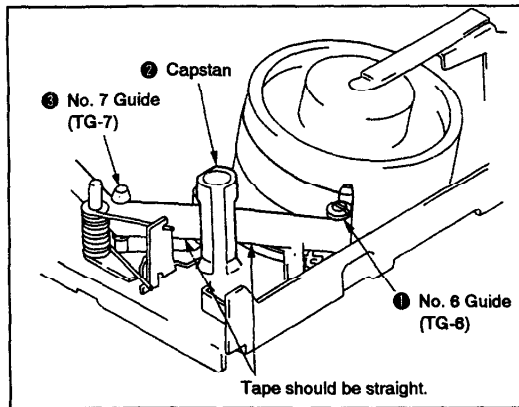


Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

- 1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
- 2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

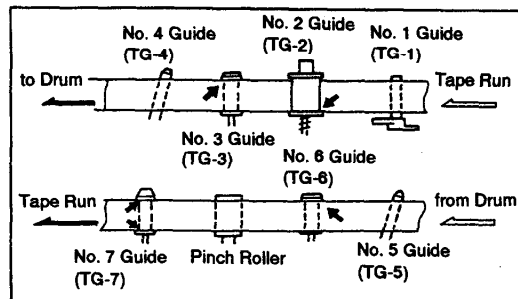


Fig. 4-16.